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INTEGRATED REGULATORY REVIEW SERVICE (IRRS)

MISSION

TO

Poland

Warsaw, Poland

15 – 25 April 2013

DEPARTMENT OF NUCLEAR SAFETY AND SECURITY

PAA NATIONAL ATOMIC ENERGY AGENCY

EXECUTIVE SUMMARY

At the request of the Government of Poland, an international team of senior safety experts met with representatives of the regulatory body of the host country (Poland) from 15 to 25 April 2013 to conduct an Integrated Regulatory Review Service (IRRS) mission. The purpose of the peer review was to review Poland's regulatory framework for nuclear and radiation safety and its effectiveness. The mission took place mainly at the Państwowa Agencja Atomistyki (PAA) Headquarters in Warsaw.

The IRRS review team consisted of eleven senior regulatory experts from eleven IAEA Member States, four IAEA staff members, one IAEA administrative assistant, and one observer.

The IRRS review comparing the Poland regulatory framework for nuclear and radiation safety against the IAEA Safety Standards addressed all facilities and activities regulated by PAA, including research reactors, one in operation and the other under decommissioning; radioactive waste management facilities; and radiation source facilities. In addition, the IRRS review addressed preparations for the development of the nuclear power program from the regulatory point of view.

In 2009, the Polish government approved a National Energy Policy, which included the introduction of nuclear power by 2023. Consequently, PAA is in a growth process to expand its scope and programs to address the regulation of nuclear power plant safety, while maintaining its focus on the safety of current activities.

Overall, the team observed many aspects of the regulatory program that were considered strengths that contribute to safety. For example, the team considered PAA to have a clear and unambiguous focus on its safety mission; a competent, well-qualified technical staff and leadership team; transparent processes that facilitate opportunities to participate in regulatory processes; and a good recognition of the challenges ahead as the program expands. PAA also actively participates with its international peers concerning nuclear and radiation safety matters. Based on these insights and the IRRS evaluation against the IAEA safety standards, the review team concluded that Poland, through the PAA, is implementing a framework that provides for effective protection of public health and safety.

The IRRS review team observed four good practices including: introducing changes to the Atomic Law Act and regulations, including those related to decommissioning, at an early stage in the NPP program; leveraging the considerable experience of senior management of the PAA in regulatory issues, and personally mentoring new inspectors; broad public consultations concerning the development of regulations and laws (broader than is required by regulations) with the institutions engaged in the Polish Nuclear Power Programme and the public; and PAA's proactive coordination approach with Poland's Office of Technical Inspection.

The growth of PAA over the next few years will be an on-going challenge for PAA's leadership, and will introduce complexities with regard to the planned regulation of nuclear power. The IRRS team offered several recommendations and suggestions on how to address these challenges. The team observed that the leadership of PAA is very engaged in operational activities, which given the current size of PAA program, has enabled a healthy focus on both safety issues and corporate governance. There will be increasing demands on PAA's management as PAA's programs expand. A further challenge relates to knowledge management issues, e.g., the retirement of many senior managers and staff having experience in Poland's prior nuclear power program.

In order to position PAA to address its growth and additional responsibilities, and to maintain its strong focus on safety for currently regulated facilities and activities, the IRRS team advised PAA to:

- Establish and frequently review the nexus between PAA's organizational goals and objectives, and resource planning (staffing and external support strategies);
- Consider strengthening and documenting PAA's management system; and
- Develop and strengthen internal guidance to document authorization processes, review and assessment, and inspection procedures.

The IRRS team's specific findings are summarized in Appendix V.

The IRRS team carried out a review in the following areas: responsibilities and functions of the government; the global nuclear safety regime; responsibilities and functions of the regulatory body; the management system of the regulatory body; the activities of the regulatory body, including authorization, review and assessment, inspection, enforcement, and the development and content of regulations and guides; emergency preparedness and response; waste management, and decommissioning. Also, the IRRS team carried out a review of the regulatory infrastructure being developed to support the introduction of nuclear power.

Observations of regulatory activities, a series of interviews and discussions with PAA staff, and review of advance reference material were used to assess the effectiveness of the regulatory infrastructure. The IRRS team's activities included observing regulatory activities at the MARIA research reactor, the waste facility site and at two other facilities using industrial and medical sources. During these visits, the IRRS team members observed PAA working practices during inspections and held discussions with licensee personnel and management.

Meetings with the Ministry of the Environment, Ministry of Economy, Ministry of Health, Ministry of Interior, Governmental Centre for Security, Council for Nuclear Safety and Radiological Protection Affairs and the Polska Grupa Energetyczna S.A. (PGE Group) were also organized.

An IAEA press release was issued following the mission.

Throughout the mission, the IRRS team received full cooperation from all parties involved. In particular, PAA staff was very open in the discussions and provided the fullest practicable assistance.

INTEGRATED REGULATORY REVIEW SERVICE (IRRS)

REPORT TO

POLAND

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REPORT TO

Poland

Mission date: *15 – 25 April 2013*
Regulatory body: *Państwowa Agencja Atomistyki (PAA)*
Location: *Warsaw, Poland*
Organized by: *International Atomic Energy Agency (IAEA)*

REVIEW TEAM IRRS	
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The number of recommendations, suggestions and good practices is in no way a measure of the status of the regulatory body. Comparisons of such numbers between IRRS reports from different countries should not be attempted.

CONTENTS

I. INTRODUCTION

An international team of senior safety experts met with representatives of the regulatory body of the host country (Poland) from 15 to 25 April 2013 to conduct an Integrated Regulatory Review Service (IRRS) mission. The purpose of the peer review was to review Poland's regulatory framework for nuclear and radiation safety. The review mission was formally requested by the Government of Poland in April 2009. A preparatory mission was conducted 4 – 5 October 2012 at the Państwowa Agencja Atomistyki (PAA) Headquarters in Warsaw to discuss the purpose, objectives, scope and detailed preparations of the review. The IRRS review team consisted of eleven senior regulatory experts from eleven IAEA Member States, four IAEA staff members, one IAEA administrative assistant, and one observer. The IRRS review team carried out the review in the following areas: responsibilities and functions of the government; the global nuclear safety regime; responsibilities and functions of the regulatory body; the management system of the regulatory body; specific activities of the regulatory body including authorization, review and assessment, inspection and enforcement development of regulations and guides, emergency preparedness and response, and the tailored module for countries embarking on nuclear power.

In addition, policy issues were discussed related to independence of the regulatory body and capacity building for embarking countries.

PAA conducted a self-assessment in preparation for the mission and prepared a preliminary action plan. The results of PAA's self-assessment and supporting documentation were provided to the team as advance reference material for the mission. During the mission the IRRS review team performed a systematic review of all topics by reviewing the advance reference material, conducting interviews with management and staff from the PAA and performing direct observations of the PAA working practices during inspections. Meetings with the Ministry of the Environment, Ministry of Economy (MoEcon), Ministry of Health (MoH), Ministry of Interior (MoInt), Governmental Centre for Security, Council for Nuclear Safety and Radiological Protection Affairs and the Polska Grupa Energetyczna S.A. (PGE Group) were also organized.

Throughout the mission the IRRS team received excellent support and cooperation from PAA.

II. OBJECTIVE AND SCOPE

The purpose of this IRRS mission was to conduct a review of Poland's radiation and nuclear safety regulatory framework and to exchange information and experience in the areas covered by the IRRS. The IRRS review scope included all facilities regulated by PAA. Regulatory activities concerning certain medical practices (such as devices produced, radiation and patient safety) that are regulated by the MoH were not reviewed. The review was carried out by comparison of existing arrangements against the IAEA safety standards.

It is expected that the IRRS mission will facilitate regulatory improvements in Poland and other Member States from the knowledge gained and experiences shared between the PAA and IRRS reviewers and through the evaluation of the effectiveness of the Poland regulatory framework for nuclear safety and its good practices.

The key objectives of this mission were to enhance nuclear and radiation safety, emergency preparedness and response:

- Providing Poland and the PAA, through the completion of the Self Assessment of Regulatory Infrastructure for Safety (SARIS) questionnaire and the Integrated Review of Infrastructure for Safety (IRIS) questionnaire, with an opportunity for self-assessment of its activities against the IAEA safety standards;
- Providing Poland and the PAA with a review of its regulatory programme and policy issues relating to nuclear and radiation safety, emergency preparedness, and preparations for the regulation of nuclear power;
- Providing Poland and the PAA with an objective evaluation of its nuclear and radiation safety, emergency preparedness and response regulatory activities and preparations for the regulation of nuclear power with respect to IAEA safety standards;
- Contributing to the harmonization of regulatory approaches among IAEA Member States;
- Promoting the sharing of experience and exchange of lessons learned;
- Providing reviewers from IAEA Member States and the IAEA staff with opportunities to broaden their experience and knowledge of their own fields;
- Providing key staff with an opportunity to discuss their practices with reviewers who have experience with different practices in the same field;
- Providing Poland and the PAA with recommendations and suggestions for improvement; and
- Providing other States with information regarding good practices identified in the course of the review.

III. BASIS FOR THE REVIEW

A) PREPARATORY WORK AND IAEA REVIEW TEAM

At the request of the Government of Poland, a preparatory meeting for the IRRS was conducted from 4 to 5 October 2012. The preparatory meeting was carried out by the Team Leader, Mr Robert Lewis, Deputy Team Leader, Mr Karol Janko and the IRRS IAEA Team representatives, Mr Eric Reber, Mr Stephen Koenick and Mr Vladimir Kutkov.

The IRRS mission preparatory team had discussions with the President of the PAA, Mr Janusz Wlodarski, other senior management and staff. The discussions resulted in agreement that the regulatory functions covering the following facilities and activities were to be reviewed by the IRRS mission:

- Research reactor;
- Radioactive waste facilities;
- Radiation sources facilities except those regulated by the Ministry of Health;
- Preparations for the regulation of nuclear power; and
- Selected policy issues.

PAA senior managers made presentations on national facilities and activities, the current status of the PAA and the self-assessment results to date.

IAEA staff presented the IRRS principles, process and methodology. This was followed by a discussion on the tentative work plan for the implementation of the IRRS review scheduled for April 2013.

The proposed IRRS Review team composition (senior regulators from Member States to be involved in the review) was discussed and the size of the IRRS Review team was tentatively agreed. Logistical consideration including meeting and work space, counterparts and Liaison Officer identification, proposed site visits, lodging and transportation arrangements were also addressed.

The PAA Liaison Officer for the preparatory meeting was Mr Andrzej Furtek.

The PAA provided IAEA (and the review team) with the advance reference material including the self-assessment results at the end of February 2013. In preparation for the mission, the IAEA review team members were tasked with conducting a review of the advance reference material and providing their initial review comments prior to the commencement of the IRRS mission.

B) REFERENCE FOR THE REVIEW

The relevant IAEA Safety Standards were used as review criteria. A list of IAEA publications used as the reference for this mission is given in Appendix VIII.

C) CONDUCT OF THE REVIEW

An opening IRRS review team meeting was conducted on Sunday, 14 April, 2013, in Warsaw by the IRRS Team Leader and the IRRS IAEA Team Coordinator to discuss the general overview, focus areas and specific issues of the mission, to clarify the basis for the review and the background, context and objectives of the IRRS and to agree on the methodology for the review and the evaluation among all reviewers. They also presented the schedule for the mission.

Mr Michal Koc served as the PAA Liaison Officer for the mission and as such, was present at the initial IRRS review team meeting where he presented an overview of the advance reference material and logistical arrangements for the mission.

The reviewers also reported their first impressions of the advance reference material.

The IRRS entrance meeting was held on Monday, 15 April, 2013, with the participation of PAA's senior management and staff. Remarks were made by Mr Robert Czarnecki, Director General, PAA, Mr Denis Flory, Deputy Director General, IAEA Department of Nuclear Safety and Security, Ms Hanna Trojanowska, Vice-Minister of Economy and Government Commissioner for Polish Nuclear Power, Mr Krzysztof Kowalik, Representative of the Ministry of the Environment, Mr Robert Lewis, IAEA Team Leader, Janusz Wlodarski, President, PAA, and Mr Michal Koc, PAA Liaison. Mr Michal Koc gave an overview of PAA activities and the action plan prepared as a result of the self-assessment.

During the mission, a review was conducted for all the review areas with the objective of providing Poland and PAA with recommendations and suggestions for improvement as well as identifying good practices. The review was conducted through meetings, interviews and discussions, visits to facilities and direct observations regarding national practices and activities.

The IRRS Review team performed its activities based on the mission schedule given in Appendix II.

The IRRS exit meeting was held on Thursday, 25 April, 2013. The opening remarks at the exit meeting were presented by the Vice-Minister of Environment, Mr Piotr Woźniak and were followed by the presentation of the results of the mission by the IRRS Team Leader, Mr Robert Lewis. Mr Janusz Wlodarski, President, PAA, made remarks which included his appreciation for the efforts of the IRRS review team and his staff concerning the review mission. Closing remarks were made by Mr Pil-Soo Hahn, Director, IAEA, Division of Radiation, Transport and Waste Safety.

1. RESPONSIBILITIES AND FUNCTIONS OF THE GOVERNMENT

1.1. NATIONAL POLICY AND STRATEGY FOR SAFETY

In Poland, the government establishes the national policy for safety by means of different instruments, statutes and laws. As regards safety requirements and principles, the policy is mainly expressed in the Atomic Law Act (ALA), which was passed in 2000 and then amended several times till 2011.

The government has prepared, but not yet adopted, a document entitled "Polish nuclear power program" (PNPP). Its paragraph 6, "Ensuring conditions for safe use of nuclear power", contains strategic considerations about safety, including the supervision of activities involving exposures to ionizing radiation by PAA, the necessary amendments of the ALA to comply with the present, and future European directives on safety.

The ALA states in article 2 that "Activities referred to in Article 1, Section 1, Item 1 and Article 1, Section 3 shall be permitted after undertaking the measures defined in appropriate regulations, aimed at ensuring safety and protection of human life and health, as well as protection of the property and environment." Other articles of the same act give more details about safety principles and objectives:

- Articles 8 and 9 impose the application of the justification, optimization and limitation principles in the exposure of person;
- Article 36 defines the safety principles that shall be applied to the construction of new nuclear facilities.

The graded approach is not stated explicitly in the ALA or in the regulations. But, it constitutes the background of some provisions regulating:

- the activities or facilities needing an authorization and those needing a notification or even exempted from notification the official durations allotted to the issuance of licenses and the documents requested according to the activity or facility involved, and;
- the frequency of inspections devoted to the various types of activities and facilities.

PNPP gives some views on the evolution of safety control in the future. It appears necessary to the IRRS team that a strategic document expressing this evolution be published. The IRRS team noted that essential elements of the policy exist; however, Poland is in the process of developing its strategy for implementation.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: GSR Part 1, requirement 1, states that** *"The government shall establish a national policy and strategy for safety, the implementation of which shall be subject to a graded approach in accordance with national circumstances and with the radiation risks associated with facilities and activities, to achieve the fundamental safety objective and to apply the fundamental safety principles established in the Safety Fundamentals"*
(R1)	**Recommendation: The government should adopt a single, clear document expressing the policy and strategy for safety.**

1.2. ESTABLISHMENT OF A FRAMEWORK FOR SAFETY

The legal framework for radiation and nuclear safety has been established by the ALA, which encompasses all the activities involving "actual and potential exposures to ionizing radiation". According to this act, the

following types of facilities and activities require an authorization or a notification, depending on the radioactivity (or electrical difference of potential) and radiation doses involved:

- manufacturing, processing, storage, disposal, transport or use of nuclear materials, radioactive sources, radioactive waste and spent nuclear fuel;
- construction, commissioning, operation and decommissioning of nuclear facilities;
- construction, operation, closure and decommissioning of radioactive waste repositories;
- production, installation, use and maintenance of the equipment containing radioactive sources;
- commissioning and use of the equipment generating ionizing radiation;
- commissioning of laboratories and workrooms using ionizing radiation sources;
- intentional introduction of radioactive substances into consumer products and medical devices;
- intentional administration of radioactive substances to humans and animals; and
- import and export of radioactive waste and spent nuclear fuel, radioactive sources or of consumer and medical products to which radioactive substances have been added.

ALA Article 7.1 states that the "responsibility for compliance with the requirements for nuclear safety and radiological protection rests with the head of organizational entity conducting the activities involving exposure."

This IRRS team believes that the Government has established a clear framework for safety and satisfies GSR Part 1, Requirement 2 for existing activities and provides a good platform for further development with respect to the introduction of nuclear power and its associated radioactive waste.

1.3. ESTABLISHMENT OF A REGULATORY BODY AND ITS INDEPENDENCE

The authorities and duties of PAA's president and of the PAA are defined in the ALA with precision. In particular, PAA is effectively independent from the governmental departments or offices promoting nuclear energy.

Avoiding conflict of interest is ensured by the following provisions:

- PAA employees are civil servants who cannot hold interests in the organizations they control. This results from general provisions of the civil servant act. The president and vice president are submitted to the same restrictions according to a special act which limits activities by persons holding public functions;
- Members of the Council for Nuclear Safety and Radiation Protection Affairs, which give advice to the PAA's president shall recuse themselves from matters in which they have some interest in the facility or activity under consideration;
- PAA does not promote or facilitate the use of radiation and nuclear energy. Responsibility for the promotional of nuclear power lies within the scope of activities of the Ministry of Economy and the Government Commissioner for Polish Nuclear Energy Matters.

The resources necessary to the fulfilment of the tasks are obtained from the state budget annually.

The MoEnv has an administrative supervision role for PAA and the President. The team interviewed the MoEnv senior managers. Under the Polish constitution, all administrative bodies like the PAA must have supervision by a government ministry. The ministry receives an annual performance report from PAA, but PAA has the freedom to set its own goals, priorities and performance indicators regarding safety issues.

PAA independently prepares and submits its budget to the Ministry of Finance without MoEnv involvement. The MoEnv prepares and processes the recruitment package for PAA's President, but the President is selected or terminated only by the Prime Minister of Poland. There are no fixed term length or separation conditions specified for PAA's President. Although the PAA must get MoEnv permission to begin work on all regulation changes, the granting of this permission appears to be only an administrative matter.

PAA's President does not receive orders or instructions from any member of the government. He has the legal authority to take actions like delivering and revoking licenses, preparing draft laws or regulations, authorizing

inspections, certifying persons holding key positions in the authorized organizations, issuing orders or injunctions to the authorized organizations.

The IRRS team believes that PAA has been established firmly as an independent regulatory body.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: GSR Part 1 Requirement 4 states that** *"The Government shall ensure that the regulatory body is effectively independent it its safety related decision making and that it has functional separation from entities having responsibilities or interests that could unduly influence its decision making."*
(1)	**BASIS: GSR Part 1 requirement 4, par. 2.8 states that** *"2.8. The regulatory body shall be able to make independent regulatory judgements and decisions, free from any undue influences that might compromise safety, such as pressures associated with changing political circumstances or economic conditions, or pressures from government departments or from other organizations."*
(R2)	**Recommendation: The Government should develop procedures and requirements to ensure that removal of persons with executive safety responsibility within PAA is not subject to unwarranted political influence.**

1.4. COMPLIANCE WITH REGULATIONS AND RESPONSIBILITY FOR SAFETY

According to the ALA, the responsibility for safety rests with the head of the organization authorized to perform an activity involving exposure to ionizing radiation. This responsibility covers all stages of the lifetime of a facility from construction to decommissioning. In addition, before applying for a construction license for a nuclear facility, an investor shall perform site studies, submit a local assessment report and obtain a positive opinion from PAA's president.

The responsibility for safety is also extended to other organizations intervening in the investment process related to the construction of nuclear facilities but without relieving the authorized organization from its primary responsibility. This enables the PAA to exercise control on the fabrication of components of nuclear facilities.

The organization holding a license cannot transfer the responsibility to another organization not holding a license valid for the facility or the activity. A license must be obtained before such a transfer can take place under rules agreed with the PAA.

1.5. COORDINATION OF AUTHORITIES WITH RESPONSIBILITIES FOR SAFETY WITHIN THE REGULATORY FRAMEWORK

According to the ALA, the competence for issuing licenses or receiving notifications concerning activities involving exposure to ionizing radiation is shared by:

- PAA's President, who is responsible for these matters in general, except as noted below;
- sanitary inspection authorities that are responsible for issuing licences for commissioning and operating X-ray devices for the purposes of medical diagnostics, interventional radiology, surface radiotherapy and non-cancerous disease therapy, and for commissioning of the laboratories using such devices. These inspection authorities are:
    - the commander of the military centre for preventive medicine in case of organizational entities subject or subordinant to the Minister of National Defence,
    - the state sanitary inspector of the Ministry of Home Affairs in case of organizational entities subject or subordinant to the minister competent for home affairs, and

- state regional sanitary inspectors in case of the other organizational entities.

Besides that, the Office of Technical Inspection and the Chief Sanitary Inspector hold specific responsibilities for inspection of facilities and activities. To avoid possible duplication or omission, a coordination system is provided for in the ALA, but its actual implementation is not described in it or in the regulations. In order to be effective, such a system should not exist only in principle; it is the opinion of the team that procedures in this regard should be developed and implemented by the entities involved.

The ALA includes an outline for a "coordination system" among authorities having responsibility for inspecting nuclear facilities.

The Agreement on Cooperation in Performing Radiological Protection Tasks concluded on 6 October 2005 between the Chief Sanitary Inspector and the President of the PAA lays down rules and forms of cooperation. In practice, however, there has not been exchange of inspection schedules of PAA and personal doses of workers from the dose register of PAA. The scope of the Agreement would allow the inclusion of cooperation on authorizations and inspections to efficiently regulate the medical use of ionizing radiation and to avoid duplication of activities.

It is the opinion of the IRRS team that the arrangements for sharing these responsibilities should be clarified and agreed by the bodies involved. New aspects arising from the plans for new nuclear facilities should be considered and reflected to enhance the existing framework for cooperation. However, it was noted that the Office of Technical Inspection, which is responsible for regulatory technical verifications of hazardous materials or equipment, is in touch with PAA for inspections and periodic safety assessments. In particular, it is consulted by PAA before the safety assessment and can give its opinion on the state of the facility.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: GSR Part 1 requirement 7 states that** *"Where several authorities have responsibilities for safety within the regulatory framework for safety, the government shall make provision for the effective coordination of their regulatory functions, to avoid any omissions or undue duplication and to avoid conflicting requirements being placed on authorized parties."*
(2)	**BASIS: GSR Part 1 Requirement 7, para. 2.19 states that** *"If responsibilities and functions overlap, this could create conflicts between different authorities and lead to conflicting requirements being placed on authorized parties or on applicants. This, in turn, could undermine the authority of the regulatory body and cause confusions of the part of the authorized party or the applicant."*
(S1)	**Suggestion: PAA should establish or revisit agreements and rules of functioning with other government authorities involved in the regulation of facilities and activities in order to coordinate regulatory activities. One specific example is that the President of PAA and the Chief Sanitary Inspector should revisit the Agreement of Cooperation to enhance coordination on the regulation of the medical use of ionization radiation.**
(GP1)	**Good Practice: The PAA proactively developed a framework for cooperation with the Office of Technical Inspection for periodic safety assessment.**

1.6 SYSTEM FOR PROTECTIVE ACTIONS TO REDUCE UNREGULATED RADIATION RISKS

Relevant provisions of the ALA cover the following situations:

- workers or agents of protection services (border guards, custom service, fire service) coming into

contact with orphan sources;

- illegal radioactive substance import or export to or from Poland; and
- difficulties with past mining or ore processing works.

In the first two situations mentioned above, the ALA requires that workers or agents of protection services be informed and trained by their organization on radiation risks and appropriate steps to take.

As regards past mining or ore processing activities, if these activities result in persistent radioactive contamination of the environment, then the operator of the site must establish the borders of the site, perform test measurements of the exposure and, if necessary, control access to the site and also the use of soil and buildings on this site.

In situations where unacceptable radiation risks may arise as a consequence of an accident or a discontinued practice, PAA and particularly its president may issue injunctions or interdictions. Other authorities like the region governor will also be involved in the actions to be taken.

When orphan sources are discovered at the border, import is denied and responsible authorities in the neighboring country are informed. PAA attempts to identify the responsible party. The radioactive waste management plant operating under the MoEcon has operational responsibilities for these materials.

1.7. PROVISIONS FOR DECOMMISSIONING AND MANAGEMENT OF RADIOACTIVE WASTE AND SPENT FUEL

The ALA expresses the national policy with regard to the safe decommissioning of facilities. As part of an application for a license to build commission or operate a nuclear facility, applicants must develop a nuclear facility decommissioning programme for approval by the PAA. The programme must be updated at least every five years and upon closure. According to the ALA, a licence for decommissioning is required, and the organizational entity decommissioning a nuclear facility has to prepare a decommissioning report and submit it to PAA for approval by the deadline stated in the licence.

Research reactor decommissioning and disposition of disused sealed radioactive sources are both funded through the state budget. Power reactor decommissioning funds are established under the ALA and should be paid by the operator to the decommissioning fund. The Council of Ministers issued a Regulation of 10 October 2012 on the amounts of contributions to cover the costs of spent nuclear fuel and radioactive waste disposal. Funds dedicated to decommissioning are under the direct control of the operator. The team noted that IRRS more stringent rules should be applied for this very important subject. For example, this could include the establishment of a state institution responsible for management of the decommissioning fund separate from the regulatory body and the operating organization; or an alternative means which would provide equivalent funding security.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: GSR Part 1 requirement 10, para. 2.33 states that** *"Appropriate financial provision shall be made for:* *(a) Decommissioning of facilities;* *(b) Management of radioactive waste, including its storage and disposal;* *(c) Management of disused radioactive sources and radiation generators;* *(d) Management of spent fuel."*
(R3)	**Recommendation: The government should put in place measures that prohibit the involvement of the operator or the PAA in the management of the decommissioning fund**.

With respect to sources, the ALA specifies that a licence for conducting activities involving a high activity source shall be issued only provided that the entity applying for the licence also concludes an agreement with the manufacturer or supplier of the source or with a state-owned public utility under which the manufacturer, supplier or utility will collect the source after the end of the source-related activities and ensure subsequent management of the source.

The national strategy for waste management in Poland is under a period of change associated with pending closure of the waste repository along with the planned development of a new nuclear power program. A Governmental Strategic Programme on *"Radioactive Waste and Spent Fuel Management in Poland"* was recently stopped and a team established by the MoEcon for drafting the *National plan for management of radioactive waste and spent nuclear fuel,* and to whom the following main tasks were assigned:

- Defining methods of management of radioactive wastes from different origins,
- Defining the method for management of spent fuel, and,
- Define guidelines and recommendations on further work (research, fuel cycle approach, …)

RWMP is the operator of the National Radioactive Waste Repository, located 90 km North-East from Warsaw in Różan. The site is situated within a former military facility. The repository has operated since 1961 as a surface repository for solid short-lived low and medium level waste, and as a temporary storage for long-lived waste (e.g. americium from smoke detectors).

PNPP provides plans and details for the preparation of the national program for the management of spent nuclear fuel and of radioactive waste. Plans are for a new surface repository to replace the Różan surface repository (2022 closure). Radioactive Waste Management Plant will be the operator.

With respect to current waste management activities in Poland, the MoEcon is the body with overall responsibility for strategies. A State-owned public utility, RWMP, operates under the supervision of the MoEcon and has been established for conducting the operational activities involving radioactive waste management and spent nuclear fuel management. RWMP is funded through the annual State budget and regulated by the PAA.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS:** GSR Part 1*, requirement 10, para. 2.28 states that "Decommissioning of facilities and the safe management and disposal of radioactive waste shall constitute essential elements of the governmental policy and the corresponding strategy over the lifetime of facilities and the duration of activities [3, 7]. The strategy shall include appropriate interim targets and end states. Radioactive waste generated in facilities and activities necessitates special consideration because of the various organizations concerned and the long timescales that may be involved. The government shall enforce continuity of responsibility between successive authorized parties.…*
(S2)	**Suggestion: In view of the planned 2022 closure of the National Radioactive Waste Depository in Różan, the government is encouraged to accelerate the production of the National Plan for RW and SNF management, and of the siting process for the new surface repository for low and intermediate level waste.**

Non-compatibility of wastes with the storage conditions at the Różan facility has been known for some years already. This was one of the conclusions of a specific report prepared by an external expert group (ordered by RWMP in the framework of the EU Phare project) on "improving the disposal Conditions and closure of the Różan NRWR." This report covered the storage Facility 3 as well. Non-segregated and non-characterized historical waste are stored in Facility 2 (47 m³) and Facility 3 (530 m³) and tritium contamination was discovered

under Facility 2. RWMP, however, did not take up as yet the reconditioning and characterization of the wastes in their yearly action plan, notwithstanding the fact that this is a prerequisite for closure of the facility.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: GSR Part 1 requirement 1 states that** *"The government shall establish a national policy and strategy for safety, the implementation of which shall be subject to a graded approach in accordance with national circumstances and with the radiation risks associated with facilities and activities, to achieve the fundamental safety objective and to apply the fundamental safety principles established in the Safety Fundamentals."*
(1)	**BASIS: GSR Part 5, requirement 11, states that** *"Waste shall be stored in such a manner that it can be inspected, monitored, retrieved and preserved in a condition suitable for is subsequent management. Due account shall be taken of the expected period of storage, and, to the extent possible, passive safety features shall be applied. For longterm storage, in particular, measure shall be taken to prevent degradation of the waste containment."*
(R4)	**Recommendation: The Government should ensure adequate resources for the timely removal of the non-segregated historical waste of Facility 2 and Facility 3 of the National Radioactive Waste Depository in Różan.**

1.8. COMPETENCE FOR SAFETY

The ALA (Article 11) provides that:

- work involving nuclear material, ionizing radiation sources, and radioactive waste or spent nuclear fuel, can only be performed by a worker possessing knowledge of nuclear safety and radiological protection regulations appropriate for this position, as well as appropriate skills and qualifications; in nuclear facilities, personnel training plans must be drawn up and approved by PAA's President. Also, in nuclear facilities there must be established professional qualification review boards to hold examinations aimed at verifying the knowledge of personnel gained during training;
- in an organizational entity performing activities connected with radiation exposure, a position important for ensuring nuclear safety and radiological protection must be occupied exclusively by an individual possessing an appropriate authorisation issued by PAA's President.

According to the ALA, administrative bodies authorized to supervise nuclear facilities other than the PAA's President, shall provide their own personnel with necessary training in nuclear safety and radiological protection, customized to the responsibilities and competence of the personnel.

PAA inspectors must be trained and skilled to perform their activities as discussed below (Section 3.3).

PAA verifies the competence of employees of licensees who are responsible for ensuring nuclear safety and radiological safety. Candidates for radiological protection officers and for positions important for ensuring nuclear safety and radiological protection may attend training only at authorized entities. Conditions which must be fulfilled by a candidate for this position and the procedure for granting authorizations were specified in the provisions of the ALA and in the Regulation of the Council of Ministers of 10 August 2012.

There is a programme of training staff for institutions and companies connected with nuclear energy – including the training of educators for Polish universities which has been organized in France since 2009. This training is organised and financed by the MoEcon. There have been signed agreements on cooperation in the training of Polish specialists with the governments of France, Japan, the United States of America and South Korea.

Attention should continue to be paid to the training of emergency workers in radiation protection issues to ensure that they can protect themselves during responses to radiation emergencies. Scrap metal dealers should also receive training concerning radiation hazards associated radioactive material that may be inadvertently present in scrap metal.

1.9. INTERFACE WITH NUCLEAR SECURITY

The ALA states that the physical protection system for nuclear facilities is under the supervision of the President of the PAA and the Internal Security Agency. It assigns the responsibility for developing and implementing a physical protection system to the head of an organisational entity conducting activities consisting of construction, commissioning, operation or decommissioning of nuclear facilities. The PAA's President is required to approve the physical protection system. In doing this, PAA is required to consult with Internal Security Agency (ISA) and obtain a positive opinion from the ISA Head. The PAA and the ISA are in the process of developing a memorandum of understanding to inform their interactions in relation to their supervisory responsibilities.

Overall, the team found that certain responsibilities for physical protection of facilities have been identified in relation to PAA, ISA and the operating organization. The implementation of the supervisory responsibilities of PAA and ISA will be further enhanced by the finalization of the memorandum of understanding between the regulatory PAA and ISA.

PAA's President co-ordinates the fulfilment of obligations of Poland concerning nuclear materials safeguards and nuclear technology control, maintain the national system for gathering and processing data related to the fulfilment of these obligations, and keeps the quantitative inventory balance of source materials and special fissile materials in the country.

The IRRS team did not review the overall adequacy of the regulatory framework for nuclear security.

1.10. PROVISION OF TECHNICAL SERVICE

Individual dose measurements and assessment of doses resulting from internal exposure can be performed by the entities possessing appropriate accreditation.

Maintaining ionizing radiation standards and maintaining, as well as maintaining and developing quality assurance systems for the calibration of dosimetric instruments, may be partially reimbursed from the national budget in the form of a special purpose subsidy.

PAA collects, verifies and analyses information obtained from the stations for early detection of radioactive contamination (mainly gamma dose rate), from the units performing radioactive contamination measurements (mainly in the environment, agricultural products and foodstuffs) and from the services that hold data needed for the assessment, including meteorological services. The above-mentioned stations and units operate in PAA, in the entities of the Polish Academy of Sciences and in the entities subordinated to the ministers competent for the areas of internal affairs, environment, economy, higher education health and to the Minister of Defense.

The IRRS team did not identify any concerns with the Government's approach with respect to relevant IAEA Requirements.

1.11. SUMMARY

Polish policy about nuclear safety and radiation protection, is mainly expressed in the ALA, which was passed in 2000 and then amended several times. The government's strategy for nuclear power is included in the PNPP that is currently in draft.

Some of the main provisions of the ALA are:

- all the activities involving "actual and potential exposures to ionizing radiation" are submitted to its provisions;

- the authorities and duties of PAA's president and of the PAA are defined with precision. In particular, PAA is independent from the governmental departments or offices promoting nuclear energy;
- the responsibility for safety rests on the head of the organization authorized to perform a nuclear activity or operate a nuclear facility. This responsibility covers all stages of lifetime of a facility from construction to decommissioning;
- physical protection of nuclear facilities is under the supervision of the PAA's President and the Internal Security Agency;
- work involving nuclear material, ionizing radiation sources, radioactive waste or spent nuclear fuel, can be performed only by a worker possessing the knowledge of nuclear safety and radiological protection regulations appropriate for this position, as well as appropriate skills and qualifications.

A State-owned public utility, "Radioactive Waste Management Plant", located in Otwock-Świerk, conducts the developmental and operational activities involving radioactive waste management and spent nuclear fuel management, and its safety is regulated by PAA.

The team has expressed some suggestions and recommendations aiming to reinforce the independent position of PAA and enhance its coordination with other official bodies involved in the regulation of nuclear activities.

2. GLOBAL NUCLEAR SAFETY REGIME

2.1. INTERNATIONAL OBLIGATIONS AND ARRANGEMENTS FOR INTERNATIONAL COOPERATION

Poland ratified a number of international agreements related to nuclear safety and radiological protection:

- Convention on Early Notification of a Nuclear Accident;
- Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency;
- Convention on Nuclear Safety;
- Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management;
- Convention on the Physical Protection of Nuclear Material, including annexes I and II and its amendment;
- Treaty on the Non-Proliferation of Nuclear Weapons, and resulting acts; and
- Vienna Convention on Civil Liability for Nuclear Damage and protocol amending it.

Poland has made a political commitment to work toward the principles of the Code of Conduct on the Safety and Security of Radioactive Sources, and is implementing the Code of Conduct on the Safety of Research Reactors.

Moreover, PAA representatives participate in committees and working groups of IAEA, EU, OECD/NEA, WENRA, ENSREG, HERCA, ENSRA and in the review meetings of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management and in the Convention on Nuclear Safety, which enable them to follow experience, modification and amendments in the regulations of other countries.

Poland has established bilateral regulatory cooperation agreements with the United States of America and France, and agreements with several neighboring countries.

2.2. SHARING OF OPERATING EXPERIENCE AND REGULATORY EXPERIENCE

The regulation of 11 February 2013 on "requirements for the commissioning and operation of nuclear facilities on the commissioning and operation of nuclear facilities" includes the following provision: "In order to ensure a proper level of nuclear safety and radiological protection at the stage of commissioning and at the stage of operation of a nuclear facility, in the organizational entity which possesses license for commissioning or operation of the nuclear facility, […] systematic analyses shall be conducted with regard to operating experience, development of international safety requirements, technological developments and new knowledge, and conclusions from these analyses shall be used to improve the safety state of the nuclear facility."

PAA participates in international exchanges of information on radiation events and incidents and takes part in a number of international exercises intended to exchange regulatory experience, in particular concerning procedures and measures to be used during emergencies. Lessons learned from the experience of other countries were used to amend the ALA and executive regulations and to adjust them to regulate nuclear power plants.

Improvements based on operating and regulatory experience and implemented on an ad hoc basis and are not subject to any formal procedure. Since feedback from experience is a fundamental way of enhancing safety and improving the regulatory control, the team believes that the PAA should adopt a more formal and systematic approach which should be a part of the management system.

As a Contracting Party to the CNS, Poland prepared a National Report for the Extraordinary Meeting focused on actions, responses and new developments that have been initiated or influenced by the accident at the Fukushima Daiichi NPPs. As Poland does not have an NPP, there report mainly focused on activities performed by the regulator as a body responsible for setting safety rules by means of drafting regulations for establishing a regulatory framework.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: GSR Part 1, requirement 15 states that** *"The regulatory body shall make arrangements for analysis to be carried out to identify lessons to be learned from operating experience and regulatory experience, including experience in other States, and for the dissemination of the lessons learned and for their use by authorized parties, the regulatory body and other relevant authorities."*
(S3)	**Suggestion: The regulatory body PAA should establish an internal process for using the feedback from operating experience, incidents and accidents in Poland as well as in other countries.**

2.3. SUMMARY

Poland has ratified all major international conventions and agreements related to nuclear safety and radiation safety. Moreover, PAA representatives participate in committees and working groups of many international organizations devoted to nuclear safety and radiation safety.

PAA takes part in a number of international emergency response exercises and participates in international exchanges of information on radiation events and incidents.. The addition of an internal procedure to formalize this participation was recommended.

The IRRS team did not identify any concerns with regard to Poland's international obligations. PAA effectively promotes international cooperation to enhance safety. Although some elements are in place for the use of operating and regulatory experience in order to contribute by safety, there are opportunities for enhancement.

3. RESPONSIBILITIES AND FUNCTIONS OF THE REGULATORY BODY

3.1. ORGANIZATIONAL STRUCTURE OF THE REGULATORY BODY AND ALLOCATION OF RESOURCES

PAA's internal organizational structure at or above the departmental level is determined by an order of the MoEnv. Any modification in the organizational structure (including the establishment of new units or cancellation of existing ones) needs a modification of this order. Nevertheless it is the President of PAA who identifies this need and submits a motion to the MoEnv concerning modification of the organizational structure and prepares a draft of the new statute. To date, despite the involvement of the MoEnv in the process, PAA's President has been able to implement organizational changes in an effectively independent manner.

PAA's president has the authority to set up units within existing departments in order to adjust PAA's organizational structure to the tasks performed by the Agency.

The effectiveness of the performance of PAA's statutory tasks is quantitatively assessed on the basis of indicators determined for important activities. The indicators were prepared to support the development of an annual task oriented budget. The main objective for the application of the aforementioned indicators is to verify the appropriateness of expenditures.

The financial resources necessary for performing PAA's tasks are determined annually as a part of the preparation of the draft budget for the next year. The possibility to adjust PAA's resources to its needs is dependent on the guidelines of the MoFin.

As regards staffing, PAA is a part of the civil service. In consequence, its human resources are governed in compliance with the Civil Service Act of 21 November 2008, which prescribes procedures for recruitment of staff, professional training and continuous development of personnel, periodic staff appraisal, etc.

3.2. EFFECTIVE INDEPENDENCE IN THE PERFORMANCE OF REGULATORY ACTIVITIES

PAA's independence in performing its functions has its foundation in the ALA and implementing regulations. PAA's president exercises its powers without needing the approval of a minister or referring to other administrations. The MoEnv provides administrative supervision of PAA. The Polish constitution requires administrative bodies like PAA to report through a Ministry, such as the MoEnv.

The PAA is effectively separated from any developmental, promotional or operational activities. For the purpose of assessing the documentation submitted with an application for a nuclear power plant licence or for the purpose of inspecting a nuclear power plant, PAA's President may use authorized laboratories and experts' organizations provided that they:

- are not designers, manufacturers, suppliers, installers or representatives of entities engaged in designing, construction or operations of the plant;
- have at their disposal the necessary personnel and suitable equipment enabling them to perform technical tasks concerning inspection;
- employ workers that are responsible for inspections who possess the necessary knowledge and experience to perform these functions; and
- guarantee objective performance of inspection.

The team concluded that PAA acts independently with respect to its regulatory and safety responsibilities.

3.3. STAFFING AND COMPETENCE OF THE REGULATORY BODY

PAA, at the time of the mission, employed 108 persons of which 23 are nuclear regulatory inspectors (10 in nuclear safety and 13 in radiation safety). In general, the technical staff in the Department of Radiation Protection and the Department of Nuclear Safety performs both authorization and inspection functions. The resources available to carry out its activities are proposed by the PAA and specified on an annual basis in the state budget.

The ALA and the *Regulation of the council of ministers on nuclear regulatory inspectors* specify conditions for qualification of regulatory inspectors, including among other things: possession of higher-education in physics, chemistry, technology or certain other specializations; and practical training, examination, and appointment by the President. Inspectors may be qualified as a nuclear safety inspector degree I or degree II, the latter being the higher classification. Practical on-the-job training of a candidate is conducted according to an individual training programme under coaching by an experienced nuclear regulatory inspector assigned as a mentor by the Chief Nuclear Regulatory Inspector, who decides on the scope and content of training (to adjust it to the position planned for the candidate and to fill in the gaps in his competences) and confirms its completion by a candidate. PAA employees build upon their competences by regularly attending specific courses and training; PAA has set a goal of devoting approximately 7 per cent of staff time to training activities. Because of the pace of change in the medical field, the review team encouraged PAA to foster continuous professional development of its inspectors that focuses on new technologies.

PAA processes approximately 500 authorizations and performs 800 inspections per year; a high majority of these relate to sealed source and medical practices. Based on the experience of the review team, PAA maintains a very high workload of inspections and authorizations compared to the staff size available to accomplish these activities. It was noted that no staffing plan has been developed that relates the inspection workload with the resources dedicated to completing it.

The introduction of a nuclear power programme has placed additional and changed demands on PAA's resources. To address these coming challenges, in 2009 PAA conducted a self-assessment process to identify the necessary organizational, legal and functional changes in the organization. The results of this review, was recorded in a document entitled "Guidelines for programme of necessary actions to be taken in the National Atomic Energy Agency". In the Guidelines, PAA recognises that there is a shortage of staff to support future activities related to the nuclear power programme. As noted in the Tailored module for countries embarking on nuclear power discussion of this report, the President of the PAA has successfully made a case for additional funding to recruit 39 new staff.

A systematic assessment of the technical expertise needed to support the licensing and inspection process, and the organizations that could potentially provide that expertise has not yet been conducted. PAA has recognised the need to have strong support from national TSOs as well as international organizations. The team encouraged PAA to consider reviewing the availability of external support across the range of technical and other disciplines needed to support the NPP programme, and to consider the way in which that support could be secured for the long-term. The team believes that overall, PAA has taken positive steps to secure increased resources to support the NPP programme.

The team observed that the PAA could benefit from further developing the management system to ensure a systematic and periodic link between strategic organizational concepts (organizational/mission goals, performance indicators, and budget information), workload forecasts, critical skills needs forecasts, and staffing plans. Staffing plans that are based on this information will help ensure effective and efficient use of resources towards agency priorities, both for the current activities and the introduction of nuclear power regulatory program. The needs and availability of external support would also be informed by this information. The team's opinion was that PAA would benefit from establishing a high level policy on its approach to the use of in-house resources and the use of external technical support in order to inform its resource strategy.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: GSR Part 1, requirement 18, para. 11 states that** *"4.11. The regulatory body has to have appropriately qualified and competent staff. A human resources plan shall be developed that states the number of staff necessary and the essential knowledge, skills and abilities for them to perform all the necessary regulatory functions."*
(1)	**BASIS: GSR Part 1 requirement 20 states that** *"The regulatory body shall obtain technical or other expert professional advice or services as necessary in support of its regulatory functions, but this shall not relieve the regulatory body of its assigned responsibilities."*
(2)	**BASIS: GSR Part 1 para 4.19 states** *"Technical and other expert professional advice or services may be provided in several ways by experts external to the regulatory body. The regulatory body may decide to establish a dedicated support organization, in which case clear limits shall be set for the degree of control and direction by the regulatory body over the work of the support organization"*
(R5)	**Recommendation: PAA should further develop a staffing plan for the current and future scope of regulatory functions that aligns the number of staff necessary and the essential knowledge, skills and abilities for them to implement the organizational goals and priorities. Such a staffing plan should leverage internal resources and external support.**
(S4)	**Suggestion: PAA should consider reviewing the availability of external support across the range of technical and other disciplines needed to support the delivery of regulatory functions relating to the NPP programme, especially the early steps of the licensing process (review of site documentation; organizational capability and preliminary safety analysis report).**
(GP2)	**Good Practice: Senior management of the PAA has long experience and practice, in regulatory issues, and personally mentors and develops new inspectors.**

3.4. LIAISON WITH ADVISORY BODIES AND SUPPORT ORGANIZATIONS

The Council for Nuclear Safety and Radiation Protection Affairs is a group of eminent scientists experienced in various scientific fields playing a role in nuclear activities, who give advice to the president of PAA. It has been established by the ALA and its internal rules have been defined in 2011 by a regulation of the MoEnv. It is consulted on every subject on which PAA's President wishes advice and mandatorily on the following ones:

- Draft versions of laws and regulations;
- Nuclear facility commissioning report; and
- Report on periodical safety assessments.

This council meets at least once a month and more often if necessary meetings are requested. It is the advisory body that is closest to PAA's President.

The IRRS review team had the opportunity to meet with the council. The activities of the council allow the President of PAA to receive valuable input from individuals in Poland outside of PAA who have extensive experience with nuclear and radiation safety matters. The main task of the council is to give advice to the PAA's President on proposed licenses. Its reviews are based on an independent assessment of the cases based on the

council members' own judgements and on some technical support provided by academic or technical institutions. The council can also be consulted on PAA policies.

Apart from this council, PAA does not have any permanent or official TSO (technical support organization) at its disposal, but it can seek advice from various institutions like universities and public institutes. It has already established specific agreements or framework agreements with Institute of Geophysics in Polish Academy of Sciences, Institute of Chemistry and Nuclear Technology, Central Laboratory for Radiological Protection, the Warsaw University of Technology, the Silesian University of Technology and the National Nuclear Research Center at Swierk. This creates the need for PAA to ensure that it is able to sustain an "intelligent customer" capability which enables it to identify the need for external advice and support; specify the nature of that support; oversee its delivery; and take decisions on its acceptance. The use of external support as opposed to in-house staff is a fundamental decision which affects the resourcing strategy and PAA may therefore, wish to consider establishing a clear policy on this matter. Provisions in the ALA address organizational conflicts of interest concerning TSOs.

3.5. LIAISON BETWEEN THE REGULATORY BODY AND AUTHORIZED PARTIES

PAA maintains regular relations with authorized organizations, particularly with those involved in nuclear facilities. The team was informed that for instance, informal contacts were very frequent with staff of the MARIA reactor. With PGE, meetings at different levels are organized 4 times a year to discuss mainly questions related to regulations. PGE and other possible license applicants have also the possibility to ask formally or informally for opinion on technical questions.

In some cases when PAA has to issue a permit or decision, an informal meeting may take place in order to discuss important items related with the permit or decision.

In performing their duties, PAA's nuclear regulatory inspectors inform the authorized parties about factual and legal circumstances which may affect the determination of their rights and obligations being the subject of administrative proceedings. A report after the inspection is signed both by the inspector and the head of the facility under inspection.

Nuclear regulatory inspectors ensure that parties actively participate in each stage of the proceedings, and before a decision is made, they enable them to make a statement concerning collected evidence and materials and claims except for situations when, due to the risk to human life or health or due to possible irretrievable harm to property, prompt actions must be taken without delay.

3.6. STABILITY AND CONSISTENCY OF REGULATORY CONTROL

The preparation of new acts or regulations is achieved according to specific processes, parts of which are public. Inside PAA, the process for preparing new acts or regulations of universally binding character is regulated in detail in the Procedure No 001/DP for preparing drafts of governmental documents at the PAA. The team's counterparts explained that, although this procedure does not mention explicitly checking consistency of a new draft with the existing laws and regulations, it is an obligatory task required by the Polish Constitution and the Regulation of the Prime Minister of 20 June 2002 on legislation-making rules.

Draft specifications for new laws and draft normative acts and any documents concerning works on these drafts are made available in the Bulletin of Public Information of the Governmental Legislation Centre and in PAA's.

Public entities which submit their comments to a draft are informed about next versions of the drafted provisions and invited for negotiation conferences aimed to work out the contents of the draft. Additionally, each entity may at each stage join the works on drafted provisions if it meets the requirements resulting from the Act of Parliament concerning lobbying activities in the legislation process in accordance with the procedure laid down in the aforementioned act.

When the decision has been made to prepare a draft act, it is mandatory to perform the following tasks:

- research with the past legal status, including applicable acts of parliament, international agreements which are binding for the Republic of Poland, legislation of international

organizations and bodies to which the Republic of Poland is a member, and the laws of the European Union which are applicable in a regulated field;

- determine effects of past legal regulations in a given field;
- specify goals and objectives which will be achieved by implementation of a new act of parliament;
- agree alternative legal solutions which may effectively help to achieve set goals;
- formulate forecasts for basic and side effects of considered alternative legal solutions, including their impact on the system of laws;
- determine financial effects of particular alternative legal solutions and arrange their sources of funding; and
- choose the best legal solution under given circumstances.

The processes described above constitute mechanisms ensuring stability and consistency of regulatory requirements.

3.7. SAFETY RELATED RECORDS

By virtue of Order No 6 of 2 August 1994, PAA's President established the method for handling documentation at PAA by introducing:

- Office Instructions – containing a description of actions concerning a document from the moment of its submission to PAA until the end of proceedings which the said document concerns;
- Archival Resources Instructions – containing a description of actions concerning a document in PAA's Archival Resources; and
- Consolidated Material List of Records which specifies the classification and method for classifying documents into a suitable category in accordance with the above regulation.

Documents classified as archival documents are perpetually maintained. For the first 25 years they are maintained in PAA's Archival Resources, and after this period they may be transferred to the State Archival Resources.

The Nuclear Safety Department developed procedures in accordance with which documents attached to the application for a license and inspection reports, and the President or Chief Nuclear Regulatory Inspector's decisions are maintained by the Head of Division of Inspection of Nuclear Installations and in the secretariat of the Nuclear Safety Department (spatial separation of documentation important from the viewpoint of protection against possible loss) in the period when the proceedings are being conducted and prior to their submission to the PAA's Archival Resources. It also refers to other documentation submitted by heads of entities operating nuclear facilities, for example, quarterly reports on operations.

3.8. COMMUNICATION AND CONSULTATION WITH INTERESTED PARTIES

The scope of activities of PAA includes the tasks that involve public information, education and popularization, scientific and technical and legal information in the field of nuclear safety and radiological protection, including informing the public about ionizing radiation and its impact on human health and on the environment and about possible measures to be applied in case of radiation emergency. PAA performs the aforementioned tasks by:

- maintaining an updated internet website containing a map showing gamma radiation dose rate in the whole territory of Poland;
- publishing a quarterly periodical entitled "Nuclear Safety and Radiological Protection";
- publishing quarterly communications to the general public about the national radiation situation; also about radioactive contamination levels under normal and emergency conditions;

- preparation of annual reports on the activities of the Agency's President.

PAA also informs interested parties and the public of the principles and criteria for safety used as the basis for its regulations and guides, and of important changes in the regulatory framework by communications and releases, press conferences, annual regulatory body PAA report, brochures and also via the website of PAA http://www.paa.gov.pl/. This website contains updated information including applicable laws, regulations and drafts of laws and provisions.

Before a decision concerning the preparation of a draft act is made, regulations and resolutions of the Council of Ministers make it mandatory to collect opinions and views of all stakeholders. Most often, the following forms of consultations are used:

- public meetings (conferences);
- requests for opinions;
- public hearings;
- consultations via websites;
- focused group interviews, structured interview/questionnaire;
- civic panels; and
- written consultations and with the use of electronic mail.

An investor of a nuclear power facility is obliged to establish a "Local Information Centre", whose functioning must be ensured from the day of application for a license until the decommissioning process of a nuclear facility is completed. The tasks of the centre is, e.g., collecting and providing updated information on the nuclear power facility and the nuclear safety and radiological protection in the surrounding area.

In addition, a local community can establish a Local Information Committee, composed of representatives of municipalities and members of the local community to provide community supervision over the investment implementation and represent the local community in relations with the authorities of the investor

PAA's President is also obliged to make available any information within the scope of activities of the Agency to all stakeholders in accordance with the Act of Parliament on the access to public information. Information is also shared by means of an electronic Public Information Bulletin.

Communications with the public on security matters are subject to the same broad requirements and expectations as safety with the expected constraints on the management and release of security-sensitive material.

Regardless of the obligations of the head of organizational entity, PAA makes available:

- information about the status of nuclear safety and radiological protection of nuclear facilities, and their impact on human health and the natural environment;
- information about the volume and isotopic composition of releases of radioactive substances from a nuclear facility to the environment;
- information about events on the premises of a nuclear facility causing serious risks;
- information about issued licenses for nuclear facilities;
- annual assessments of safety of nuclear facilities.

Information which cannot be made available is the information regarding physical protection, nuclear material safeguards and confidential commercial information

In practice, PAA informs the public about radiological emergencies and the incidents it judges of interest for the public (for instance, the rumors of an accident). It does not inform systematically about every incident or the risks associated with the activities placed under its supervision.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: GSR Part 1, requirement 36 para. 2.5 (9) states that** *"The regulatory body shall promote the establishment of appropriate means of informing and consulting interested parties and the public about the possible radiation risks associated with facilities and activities, and about the processes and decisions of the regulatory body."*
(S5)	**Suggestion: The regulatory body PAA should prepare a strategy for increasing transparency with the public about risks and incidents in the different facilities and activities subject to its regulations.**
(GP3)	**Good Practice: Broad public consultations concerning the development of regulations and laws (broader than is required by regulations) have been conducted with the institutions engaged in Polish Nuclear Power Programme and the public.**

3.9. SUMMARY

The IRRS team concluded that the PAA exercise regulatory functions without undue external influence and has appropriately involved the licensee and the public in the regulatory process, in accordance with the IAEA safety standards. The IRRS team recommended that PAA should further develop a staffing plan for current and future regulatory functions that aligns the number of staff necessary and the essential knowledge, skills and abilities for them to implement their organizational goals and priorities. The IRRS team further suggested that PAA should consider reviewing the availability of external support across the range of technical and other disciplines needed to support the delivery of regulatory functions relating to the NPP programme, especially the early steps of the licensing process (review of site documentation, organizational capability and preliminary safety analysis report).

4. MANAGEMENT SYSTEM OF THE REGULATORY BODY

4.1. IMPLEMENTATION AND DOCUMENTATION OF THE MANAGEMENT SYSTEM

PAA has established and implemented a management system (MS) that aims to ensure that internal and external responsibilities of the regulatory body are properly discharged, and enables continuous review and improvement of performance. However, the scope of the authority's activities is described in several documents, which makes it difficult to get an overview of the MS. The MS was continually developed over several years on the basis of an analysis of the legislation and activities which are necessary to perform the basic functions of the regulatory body. Changes in the activities of PAA are continually identified and consequently, existing procedures are reviewed and updated or, if necessary, new procedures are developed. The results from audits and feedback derived from the performance of regulatory activities such as inspections are used as the basis for improvement of the MS.

The MS is documented in a variety of documents such as internal rules, mission and vision policy documents and detailed procedures and instructions. Core procedures must be approved by the President or the Chief Nuclear Regulatory Inspector before they are issued by the President of PAA. Support procedures are approved and issued by the President or Director General of PAA.

The internal rule, Order No 4 of November 2011, addresses organizational rules and regulations. The document specifies the organization and the scope of the tasks of its organizational units, the scope of tasks of senior managers (management board, department directors, and heads), describes the arrangements for the termination of employees and identifies documents requiring the signature of the President. The President can also, according to The Code of Administrative Proceeding (art 268a), delegate authority to employees to manage affairs on his behalf. This delegation must be done in writing. Such delegations of authority are not communicated to the staff in an open and transparent way.

Safety goals and the objectives are stated in three separate documents:

- Vision, mission, and strategy of PAA;
- Quality policy of the PAA; and
- Task oriented budget of the PAA.

Procedures are available through the intranet and organized by department.

The IRRS team considers that the PAA should present relevant material in a manual of the MS (electronic or paper based) that gives the staff an overall understanding of the MS.

Process implementation

PAA's MS is largely not process oriented. In supporting the integration of all procedures the IRRS team considers that the approach of the PAA should be to identify, develop and manage their processes in the most appropriate way. PAA should determine which processes are to be documented, on the basis of applicable regulatory and statuary safety requirements, and the nature of the organization's activities and overall strategy. A common understanding should be developed of what a process is, how many processes are in place in the organization and how they interrelate.

PAA maintains documentation of their activities in paper and electronic form. In the case of the EWA research reactor, documentation concerning the decommissioning of the facility could not be located during the IRRS review mission. See section 6.2 for details.

PAA does not have a formal process for the management of its organizational changes. The need for a procedure addressing organizational change has not yet been identified. PAA will be adjusting its activities and potentially its organization structure in anticipation of regulating nuclear power plants, and therefore, it is important that such procedures are established.

Measurement, assessment and improvement

The effectiveness of the management system of the PAA is assessed through the evaluation of performance indicators that are linked to items in the task oriented budget enforced by the parliament. PAA supplies an annual performance report to the Prime Minister according to the ALA. An external audit is performed by the Supreme Chamber of Control that evaluates the performance of tasks in terms of their legality, purposefulness, reliability and cost effectiveness. This external audit focuses on financial and administrative issues but also addresses special topics, e.g., in 2012 the focus was on the development and progress in implementing nuclear power. The findings of these audits are used as a basis for the improvement of the organization and its activities.

Internal audits are performed by an independent internal auditor who is employed by PAA and reports directly to the President. Internal audits are required by the Act of Parliament on Public Finances and Notice No 4 of the Minister of Finance. This is a standard for organizations in the public sector. The aim of internal audits is to support the ministers heading relevant departments in meeting objectives and performing tasks. Selected areas of the PAA's activities are subject to analysis and assessment within the framework of annual audit plans. Recommendations in audit reports, after their approval by the President, are implemented within specified time frames by appropriate organizational units.

Internal audit plans have the objective of identifying areas for improvement. The internal audit plan is based on a risk analysis, which includes the identification of activities and the assessment of risk in all areas of the Agency's activities.

In the recently approved procedure for performance of procedures (No 2 February 2013), elements of what the procedures should include are listed and § 7 describes how non-conformances shall be handled. The IRRS team encouraged senior manager to clearly communicate the content of the procedure to the staff and to include it in the prospective manual of the management system.

Input to the improvement of the MS is also received from managers and from employees, e.g. through participation of employees in anonymous questionnaires with regard to the self-assessment of management control, performance of consultations in the organizational units with regard to drafts, etc. Quarterly workshops address management control and risk management with regard to important topics and the identification of solutions to important problems. The team is satisfied that PAA measures, assesses and improves the MS; however, this process is not described in written procedures within the MS.

Safety Culture

Safety culture is addressed in the quality policy and PAA's management indicated that safety culture issues are discussed during inspector training. The team concluded that internal safety culture issues should be explicitly addressed and communicated to staff in a more comprehensive and systematic way to ensure a common understanding and a learning and questioning attitude at all levels of PAA. The importance of continually developing, assessing and improving safety culture should also be addressed as a part in the manual of the MS. To avoid regulatory capture, PAA should consider, in the development, assessment and improvement of the safety culture, the implications on safety culture in relation to independence to be addressed in the performance of regulatory functions.

Graded approach

It is stated in the PAA quality policy that a graded approach shall be applied as a fundamental principle. PAA representatives indicated that a graded approach is used when meeting safety objectives in an attempt to optimize the use of available resources. The optimization of the use of resources is incorporated into the process of preparing the task oriented budget of the PAA (distribution of financial means in relation to objectives set and indicators adopted) through the allocation of human resources to the appropriate organizational units. The basis for allocation of resources is the scope of responsibilities of particular organizational units as specified in the organizational rules and regulations of the PAA and tasks agreed for a given year. An increase in the time and effort required for the performance of particular tasks and their frequency is an indicator signaling if a particular department may require additional resources, e.g. number of inspected ionizing radiation sources, their type, frequency of inspection agreed in connection with risks created, etc.

PAA consider that resources (in terms of staff, finances, equipment, etc.) are allocated according to a graded approach in accordance with assessed risks. The graded approach is also reflected in the frequency of inspections (e.g. once every year, twice a year, once in three or five years), enforcement and penalties which are conditional on hazards. The IRRS team's view was that PAA would benefit from developing performance indicators that are aligned with mission, vision and operational strategies, and should develop human resource strategies and staffing needs assessments to optimize organizational achievement against the performance indicators. This process will ensure that limited staff resources are apportioned to the highest organizational priorities, and that knowledge management needs are considered. Also, this will allow annual evaluation of goals as part of performance reporting.

The lack of an integrated MS and the fact that management directives are not contained in one manual was identified during the PAA's self-assessment. Senior managers indicated that they are committed to improving the documentation, development and implementation of the management system.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: GSR Part 1Requirement 19 states that** *"The regulatory body shall establish, implement and assess and improve a management system that is aligned with its safety goals and contributes to their achievement." Para 4.14 States that "the regulatory body shall establish and implement a management system whose processes are open and transparent. The management system of the regulatory body shall be continuously assessed and improved."*
(2)	**BASIS: GS-R-3, section 5, states that** *"processes necessary for achieving the safety goals of the organization shall be established."*
(3)	**BASIS: GS-R-3, para. 5.28, states that** *"Organizational changes shall be evaluated and classified according to their importance to safety and each change shall be justified.***"**
(4)	**BASIS: GS-R-3, para. 6.7, states that** *"A management system review shall be conducted at planned intervals to ensure the continuing suitability and effectiveness of the management system and its ability to enable the objectives set for the organization to be accomplished"*
(5)	**BASIS: GS-R-3 para. 2.5 states that** *"The management system be used to promote and support a strong safety culture by:* - *Ensuring a common understanding of the key aspects of safety culture within the organization;* - *Providing the means by which the organization supports individuals and team in carrying out their task safely and successfully, taking into account the interaction between individuals, technology and the organization;* - *Reinforcing a learning and questioning attitude at all levels of the organization;* - *Providing the means by which the organization continually seek to develop improve its safety culture."*
(R6)	**Recommendation: PAA should reflect the safety goals throughout its management system documentation and identify the processes used to achieve its mission, vision, and goals, including;**

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
	1) a process for internal communication; **2) an explicit process for organizational change; and** **3) an explicit method for performing management system reviews.**
(R7)	**Recommendation: PAA senior management should promote an awareness of internal safety culture and ensure that it is appropriately reflected within its management system.**

4.2. MANAGEMENT RESPONSIBILITY

In the internal rule, Order No 4 of November 2011, responsibilities for managers are specified. Managers of the PAA including the President, Vice-President and directors of organizational units, participate in the development, implementation and improvement of the management through:

- briefings held every week during which achieved results and planned long-term and short-term actions are discussed;
- cyclical workshops of management staff dedicated to the analysis of important topics with regard to managing the regulatory activities and finding solutions to important problems, e.g., self-assessment of the status of management control and risk management;
- the annual self-assessment performed within the framework of the management control system and;
- agreement of the procedure for the documentation of procedures.

The President has recently designated a unit within the office of Director General to coordinate the development and implementation of the MS. It emerged during the interview that it is not the head of the unit who will report to senior management charged with these responsibilities. The IRRS team considers that the President should appoint an individual who is responsible for reporting the performance of the MS directly to senior management.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: GS-R-3 para. 3.13 states that** *"An individual reporting directly to senior management shall have specific responsibility and authority for:* *— Coordinating the development and implementation of the management system, and its assessment and continual improvement;* *—Reporting on the performance on the management system, including its influence on safety and safety culture, and any needs for improvements;* *—Resolving any potential conflicts between requirements and within the process of the management system."*
(R8)	**Recommendation: The PAA should appoint an individual with responsibility and authority for the coordination of the development and implementation of the management system.**

4.3. RESOURCE MANAGEMENT

The resources available to carry out the activities of the PAA are specified on an annual basis in the state budget. The President has control over a separate apportionment of the budget. In preparation for the regulation of

nuclear power, a document was prepared concerning additional resources necessary to perform these functions (Guidelines for the program of activities to be taken in the PAA).

In accordance with the Civil Service Act, a description must be prepared for each job title including, among other things, the scope of tasks and responsibilities and qualifications required. In the case of employees performing inspection tasks (according to a well-established practice in PAA, it applies also to all basic regulatory functions: authorization, assessment, inspection and enforcement), it is required to possess qualifications specified in the *Regulation of the Council of Ministers of 24 August 2012* on nuclear regulatory inspectors. These qualifications are confirmed with an examination. Each employee starting his/her work in the civil service is obliged to attend the preparatory service which ends with an examination. The topic is further discussed in Module 3 on staffing and competence of the regulatory body.

4.4. SUMMARY

PAA has established and implemented a MS which is assessed and continually improved. However, the MS is not process oriented and the existing procedures are not brought together in a coherent manner. Safety goals are addressed in the quality policy but are not further reflected in the management system. Internal safety culture should be addressed more explicitly to ensure a common understanding and a learning and questioning attitude in all levels in the PAA. The importance of continually developing, assessing, and improving safety culture should also be addressed as part of the MS. PAA's senior management indicated a strong commitment to improving the MS.

5. AUTHORIZATION

5.1. GENERIC ISSUES

Legal authority to issue licences, binding opinions and to exercise regulatory control over facilities and activities in Poland is given to the President of the PAA. A License can only be granted on the condition that an applicant shall prove fulfilment of all the relevant requirements set forth in the ALA and associated regulations.

The ALA lists the facilities and activities and the specific licensing stages that require authorization. The ALA also prescribes that a license shall be issued for an indefinite period unless the applicant specifically wants the license to be issued with an expiration date.

Authorizations are published in the Public Information Bulletin. The Procedure on appeals of licensing decisions was specified in the Code of Administrative Procedure and in the Act of Parliament on the Proceedings before Administrative Courts. The appeal procedure is mentioned in the license. The appeal does not require a thorough justification. The reason for the appeal may be lack of acceptance of the interested party.

5.2. AUTHORIZATION OF RESEARCH REACTORS

In accordance with Article 4, section 1, item 2 of the ALA, an obligation to hold a license refers to all stages of a facility's lifetime. The authorization to perform such activities is included in particular licenses regarding construction, commissioning, operation, and decommissioning of nuclear facilities. Pursuant to Article 39g of the ALA the aforementioned licenses specify conditions for performing activities covered by the license.

Certain activities require consent of PAA's President. This is because according to Article 37d of the ALA, in case of renovation of any nuclear facility system, construction element or installation important for nuclear safety and radiological protection, and each reactor start-up following fuel load, a written approval of the Agency's President is required in the form of an administrative decision.

Related to authorization for modification, the PAA's President may change conditions for performing activities covered by the license if it is necessary to ensure nuclear safety and radiological protection. Through future implementation of the periodic safety assessment, the Agency's President is authorized to amend the conditions of activities covered by the license.

PAA currently uses a procedure (01/DBJ) for assessing operating license applications and preparing drafts of licenses of the PAA's President for activities supervised by the Unit of Nuclear Installation Inspection. The 01/DBJ procedure determines principles and course of action in case when an application is considered to issue a license for permanent operation of a research reactor, taking into account the assessment of completeness and merit-based correctness of documentation attached to the application. In addition, Procedure 005/ DOR specifies principles and procedures concerning license applications (or notification, of activities) and documents required when submitting license applications ((decision form on issuing a license, decision form on refusing to issue a license, annex form to a license, document form on revoking license, document form on expiry of license, document form on accepting notification, and document form on refusing to accept notification).

PA verifies the competence of employees responsible for ensuring nuclear safety and radiological safety. Candidates for radiological protection officers and for positions important for ensuring nuclear safety and radiological protection may attend trainings only at the authorized entities which are entered in the relevant register maintained by the Agency's President. Next, they pass examination before an examination board appointed by the Agency's President. Conditions which must be fulfilled by a candidate for this position and the procedure for granting authorizations were specified in the provisions of the ALA and in the Regulation of the Council of Ministers of 10 August 2012 on positions important for ensuring nuclear safety and radiation safety and radiological protection officers.

Decommissioning of research reactors requires a license that applies to activities such as decontamination, and appropriate treatment of radioactive waste and spent nuclear fuel. The documents to be delivered with the license

application were specified in the regulations at that time when the EWA reactor was decommissioned. This license is valid indefinitely and requires reporting on activities performed on a quarterly basis. The safety report for the EWA research reactor described the end state conditions (stage 2 according to IAEA). Decommissioning works were followed by the nuclear regulatory inspectors who verified the end state conditions.

5.3. AUTHORIZATION OF RADIOACTIVE WASTE MANAGEMENT FACILITIES

The following activities involving radiation exposures related to radioactive waste management facilities require a licence or notification:

- manufacturing, conversion, reprocessing, storage, disposal, transport or use of, and trade in, nuclear materials, radioactive sources, radioactive waste and spent nuclear fuel;
- construction, commissioning, operation and decommissioning of nuclear facilities; and
- construction, operation, closure and decommissioning of disposal facilities for radioactive waste and disposal facilities for spent nuclear fuel;

Import, export or transit of radioactive waste and spent nuclear fuel requires authorization from the President of PAA. Spent nuclear fuel is treated as high-level radioactive waste - if intended for disposal. Disused sealed radioactive sources are a separate category of radioactive waste.

The licensing regime is well elaborated for each licensing stage and clearly stipulates the type of documents and information to be delivered at the time of license application (e.g., Regulation established by the Council of Ministers of 3/12/2002).

The timeframes associated with the review and decision of requests for the various licensing stages associated with storage and disposal facilities are included in the prepared amendment of the ALA. The requirement for periodic safety reviews for such facilities are also included in this amendment.

Technical discussions may be organized with prospective applicants to clarify issues related to the license application. If necessary, suitable conditions and requirements will be included in the licence.

Regulations establishing the conditions for storage and disposal of radioactive waste and spent nuclear fuel are in place or addressed within the prepared amendment to the ALA. The IRRS team noted that additional implementing guidance may be needed.

In addition to the license given by PAA'S president, other authorizations are necessary in the different stages of licensing (e.g., construction license is issued by the regional Governor). To minimize conflicting requirements, the responsible authorities have been providing proposed conditions on the licenses to their counterparts for consultation. As far as safety is concerned, final decisions will be taken by PAA. At present no related problems have been encountered. Additional discussion on liaison with other authorities is provided in Module 1, Section 1.5 of the report.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: GSR Part 5 requirement 3 states that** *"The regulatory body shall establish the requirements for the development of radioactive waste management facilities and activities and shall set out procedures for meeting the requirements for the various stages of the licensing process."*
(S6)	**Suggestion: The PAA should use the opportunity presented by the new NPP initiatives to develop a plan for issuing internal guidance documents for various types of repository activities with respect to siting, design construction, operation, closure and institutional control after closure.**

5.4. AUTHORIZATION OF RADIATION SOURCES FACILITIES

The competence for issuing licenses and receiving notifications concerning activities involving exposure to ionizing radiation lies with the President of the PAA, and in the case of medical practices, with other governmental authorities.

Poland is an EU Member State and has transposed into its own legal system the relevant EU regulations in the field of radiation safety and implementation of radiation activities which address, among others, exemption levels, licensing requirements for activities with sources of ionizing radiation and conditions for their use.

Article 4 of the ALA states that prior to the commencement of a radiation activity, it is necessary to notify the authority and if appropriate to obtain a licence for it. Activities requiring a licence are found in article 6 of the ALA but are more specifically defined in regulation *on the cases when the activities involving the exposure to ionizing radiation are exempted from mandatory licensing or notification and on the cases when such activities can be conducted on the basis of a notification.*

Article 5 of ALA gives general requirements on what a notification or application for a licence to carry out a radiation activity should contain. Additional guidance is provided in the *regulation on the documents required upon the submission of a licensing request for activities which involve exposure to ionising radiation or upon reporting such operations* The procedure for authorization follows the administrative procedures law. This requires a legal review of the application for content and completeness, then a review and assessment delegated by the Director of the Department of Radiation Protection, then back to legal prior to sending the application to the President for approval.

PAA authorizes radiation therapy equipment including simulators and nuclear medicine facilities. PAA also authorizes Radiation Protection Officers (RPO) that are referred to officially as “radiation protection inspectors” and operators of radiation therapy equipment.

During the observation of the hospital inspection, the team noted that the program for certification of licensee RPOs and radiotherapy operators by the PAA could possibly cause confusion regarding roles and responsibilities for safety between PAA and licensees.

The IRRS team took notice of the graded approach that is applied to licensing in such way that for some activities, implementing sources with activities between one and 100 times the exemption level, the need for obtaining a license is replaced by a requirement for entry into the registers of sources and activities. The IRRS team found that this graded approach reduces the burden on the applicant and the authority without impairing on the regulatory control over the practice or the source.

According to ALA, transport of radioactive materials is a radiation activity, and therefore authorization by the President of the PAA is required. Generally, the transport of UN class 7 materials is governed in Poland by a set of regulations on the transport of dangerous goods. In accordance with these regulations the President of the PAA is authorized to approve types of packages and to validate foreign certificates for packages as appropriate. PAA staff informed the IRRS team that they have good cooperation with other governmental bodies which are also responsible for the transport of dangerous goods and have demonstrated this during the return of spent fuel to Russia.

5.6. SUMMARY

The ALA, containing the licensing regime for activities and facilities, is an extensive document with a significant amount of detailed provisions of a technical and procedural nature. The authorizations issued by PAA include licences and permits. An amendment to this law is prepared and includes provisions and conditions for RW and SNF management, implementing the waste directive (Directive 2011/70/EURATOM) and covering the staged approach for repositories as well. PAA also issues licences to certain individuals working in certain positions and special training institutions for providing training in the area of nuclear safety and radiation protection. The President of PAA has the authority to issue, amend, renew, suspend and revoke licences and permits. In general the legal and regulatory framework for the authorization process of PAA and the authorization stages established are in line with the IAEA safety standards. In addition, the IRRS team suggested

PAA should use the opportunity presented by the new NPP initiative to develop a plan for issuing internal guidance documents for various types of repository activities with respect to siting, design construction, operation, closure and institutional control after closure.

6. REVIEW AND ASSESSMENT

6.1. GENERIC ISSUES

The ALA and associated regulations serve as basis for review and assessment of applications for authorization. The level of review conducted varies according to the types of licenses.

With respect to decommissioning, pursuant to Article 8a of the ALA, the licensee shall inform the PAA in writing, on termination of its operation. PAA shall inform the licensee in writing of conditions related to the termination of the activity such as the management of radioactive sources, nuclear materials or radioactive waste and eventual decontamination of the site. They usually include a request for transfer all source and radioactive waste to authorised entities and monitoring of site for eventual contamination. Depending on the case, the site is inspected. If all conditions are met, the administrative decision on termination of licence is taken.

6.2. REVIEW AND ASSESSMENT FOR RESEARCH REACTORS

Under the ALA, depending on the particular stage in the lifetime of a research reactor, it is required to prepare and submit to PAA a set of documents. The types of technical documents regardless of the stage in the lifetime include: location report; design of a nuclear facility; safety report; safety classification for structures, systems, and components; integrated management system; commissioning program; plan and report for the performance of a periodic safety assessment; and decommissioning. This will be applicable to new facilities.

MARIA reactor has been in operation since 1975. In years 1985-1993 the reactor operation was stopped for its essential modernization, including installation of a passive system designed for filling the reactor's core with water from reactor pool. From April 1999 to June 2002, following the recommendations of the IAEA, there was a conversion of reactor core from highly enriched uranium fuel (HEU) fuel (80% U-235) to also HEU fuel, though of lower enrichment (36% U-235). This process was performed gradually in 106 subsequent cycles of the reactor's operation. The present enriched uranium fuel resources allow the reactor to operate until 2015.

MARIA research reactor's most recent operating license was issued in 2009. PAA reviewed the safety analysis report, held technical meetings and produced a memorandum documenting the results of their review. The operating license was issued based on the results of the review. Within this licensing framework, MARIA research reactor's safety analysis report has not been comprehensively reviewed and the results compiled into a safety evaluation report.

The provision for periodic safety review included in the recent amendment is applicable to MARIA. The comprehensive regulatory review and assessment should be part of the periodic safety assessment.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: Requirement 25 of GSR Part 1 states that** *"The regulatory body shall review and assess relevant information - whether submitted by the authorized party or the vendor, compiled by the regulatory body, or obtained from elsewhere - to determine whether facilities and activities comply with regulatory requirements and the conditions specified in the authorization. This review and assessment of information shall be performed prior to authorization and again over the lifetime of the facility or the duration of the activity, as specified in regulations promulgated by the regulatory body or in the authorization."* **BASIS: Requirement 4.48 of GSR Part 1 states *that*** *"The regulatory body shall record the results and decisions deriving from reviews and assessments, and shall take appropriate action (including enforcement action) as necessary. The results of reviews and assessments shall be used as feedback information for the regulatory process."*

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(R9)	**Recommendation: As part of the upgrading of MARIA research reactor to comply with the ALA by 2015, PAA should conduct a full safety evaluation of the application.**

In the quality assurance program of MARIA research reactor, the safety class, safety function and quality class of SSCs are implemented and described.

Related to the technical resources for review and assessment, PAA has assigned three staff. In 2009, there was a new LEU fuel (below 20% of U-235) testing in MARIA research reactor. For the purpose of reactor core conversion, in 2009 two fuel elements were loaded in MARIA reactor's core, with enrichment 19.75%, containing 480 g of U-235 isotope and the tests of the said elements were completed in 2011. The IRRS team was informed that three of the staff of PAA was involved for safety review through safety evaluation report for the fuel testing written in 2008.

PAA management should be aware of the staff number assigned for review and assessment on fuel and safety related design modification of research reactor and consider the competence of assigned staff is appropriated, and if necessary, sufficient support should be taken such as hiring a TSO.

Regarding design modification and installation of new facilities, from the period of 2004 to the date of IRRS mission, there were several items of design modification that were submitted to PAA officially, and all of them have been reviewed following the ALA. However, through the site visit, it was noticed that a radiation monitoring display was installed in the main control panel in 2009, and this modification was not added to the SAR. This modification should have been reported to PAA, and appropriate review and assessment initiated.

Regarding the process of review and assessment, PAA uses a procedure (01/DBJ) for assessing applications for permanent operations. The procedure determines the principles and course of action to issue a license for activities occurring under permanent operation of a nuclear facility, taking into account the assessment of completeness and merit-based correctness of documentation attached to the application. Document forms were attached to the procedure. The IRRS team considers that additional guidance may be necessary to support a comprehensive review of the safety analysis report expected during the next review phase.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: Requirement 4.44 of GSR Part 1 states that** *"Any proposed modification that might significantly affect the safety of a facility or activity shall be subject to a review an assessment by the regulatory body."*
(2)	**BASIS: Requirement 4.48 of GSR Part 1 states that** *"The regulatory body shall record the results and decisions deriving from reviews and assessments, and shall take appropriate action (including enforcement action) as necessary. The results of reviews and assessments shall be used as feedback information for the regulatory process."*
(S7)	**Suggestion: The PAA should develop procedures covering the review and assessment of new facilities, design modification and SAR amendments for research reactors.**

The EWA research reactor was operated in years 1958-1995. Initially, the reactor's thermal power was 2 MWt, and later it was increased to 10 MWt. EWA reactor's operator submitted an application with the decommissioning plan of EWA research reactor in 1996, and the regulatory body granted a permit to the operator on May 1997.

In 2002, the reactor decommissioning process reached the end of the "second phase," indicating that all nuclear fuel and all irradiated structures and components were removed from the reactor. The IRRS team noted that the PAA could not provide a copy of the safety evaluation used in support of the decommissioning license.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: Requirement 4.48 of GSR Part 1 states that** *"The regulatory body shall record the results and decisions deriving from reviews and assessments, and shall take appropriate action (including enforcement action) as necessary. The results of reviews and assessments shall be used as feedback information for the regulatory process."*
(R10)	**Recommendation: The PAA should establish internal management controls to ensure that official records related to licensing activity for research reactors are retained.**

6.3. REVIEW AND ASSESSMENT FOR WASTE MANAGEMENT FACILITIES

There are few licensed waste management facilities. These facilities have received licenses to operate for an indefinite period. As there is currently no obligation for periodic safety review, the role of review and assessment is rather limited. However, it is expected in the near term that a new surface repository will have to be licensed.

For NPP's and associated RW and SNF facilities, the applicant's safety analysis, taking into account technical and environmental factors, shall be verified by an independent entity. When it is judged that an insufficient basis for nuclear safety and radiological protection issues has not been provided, tests or external expertise may be requested by PAA at the cost of the applicant.

The IRRS team noted that at present only 2 new employees are available in the group that would perform the review and assessment related to licensing of the new repository. In practice, the review and assessment is carried out by the regulatory inspectors of the nuclear safety and the radiation protection department. These departments have limited capacity and may need to outsource parts of the review to external expertise groups.

There is no strategy available that describes the review and assessment of a safety report. In view of the importance of the upcoming projects, PAA is advised to develop a strategy on how to conduct review and assessment.

Review and assessment of relevant QA programmes are carried out by the regulatory body at all stages of the licensing process, i.e., prior to and during the construction, operation, and closure of radioactive waste repositories and spent nuclear fuel repositories, and construction and operation of storage facilities for spent nuclear fuel. The regulatory body, through the requirements concerning the preparation and implementation of the QA programme, obliges the applicant/licensee, as well as his vendors, to plan, perform, verify and document all their activities in an organized and systematic way.

Licenses contain a requirement that the SAR be maintained during the lifetime of the facility. This is verified by PAA during inspections and in organized meetings as well as by verification of the quarterly reports sent by the operator.

6.4. REVIEW AND ASSESSMENT FOR RADIATION SOURCES FACILITIES

The review and assessment by PAA is conducted by staffs who also conduct inspections. They have the right to receive assistance from an outside expert. The costs of external experts and eventual analyses are funded by the applicant. The review is performed on the basis of a written procedure. The application is checked for its content and completeness. If the assessment is conclusive then a draft licence is produced. The review process usually

takes 15 days of one month deadline set by law. Thirteen staff at the Department of Radiation Protection annually process more than 500 applications for licenses to conduct activities involving exposure to ionizing radiation.

PAA maintains state of art registers of radiation activities and a register of sources of ionizing radiation. More than 12,000 sealed radioactive sources, including more than 3,700 high-activity sealed sources are currently registered and used by more than 2,700 organizational units where more than 4,600 entities perform separate activities involving ionizing radiation sources. All transactions with radioactive sources are recorded in such way that they are, in principle, tracked from cradle to grave. This computerized register facilitates licensing administrative procedures to a great extent.

6.5. SUMMARY

The IRRS team looked at PAA review and assessment practices for regulating a wide range of types of nuclear and radiological facilities and activities. PAA is considered to have established conditions for safety reviews and assessments applying standards in line with IAEA Safety Standards.

In some cases, however, the IRRS team found review and assessment processes are not governed by formal procedures and suggested that PAA develop procedures covering the review and assessment of new facilities, design modification and SAR amendments for research reactors. In the context of further strengthening the internal management system, the IRRS team recommended that PAA should establish internal management controls to ensure that official records related to licensing activity for research reactors are retained. The IRRS team noted the PAA should conduct a full safety evaluation of the application of the MARIA research reactor upgrade according to the legal requirement to fully comply with the ALA by 2015.

7. INSPECTION

7.1. GENERIC ISSUES

The regulatory body carries out inspections of facilities and activities to verify that the authorized party is maintaining safety and in compliance with safety requirements and the conditions upon which authorization is granted. The scope and depth of regulatory inspections are commensurate with the radiation risks associated with the facility or activity, in accordance with a graded approach.

7.1.1. INSPECTION APPROACHES, METHODS AND PLANS

Based on the provisions of the ALA, PAA has the right to inspect and control operations in nuclear and radiation source facilities. In this regard, it has access to any place where such operations are being carried out, as well as to carry out confirmatory measurements, to take and to receive samples and to install necessary equipment.

The nuclear facilities subject to inspection by PAA are the research reactors MARIA and EWA situated in Otwock. Besides industrial, academic and research uses of radiation sources, the main radiation source facilities subject to inspection by PAA are 44 radiotherapy facilities, 80 nuclear medicine laboratories, 104 radiography facilities, and Polatom (producing isotopes). Radioactive waste management facilities are also subject to inspection.

The department in charge of the inspection of nuclear installations and waste facilities is the Nuclear Safety Department. The Radiation Protection department is in charge with the inspection of facilities using radiation sources.

A yearly inspection plan is prepared by the responsible departments and signed by the Chief Nuclear Regulatory Inspector. Targets are set concerning frequency of inspection based on the risk that the activity or facility presents.

The overall inspection programme includes routine and reactive inspections that may be announced or unannounced. The majority of the inspections are routine and announced.

Reactive inspections are carried out as a consequence of an operational event or of an observation of an unsatisfactory situation. The decision to perform reactive inspections is made on a case by case basis without written procedures.

7.1.2. INSPECTION PROCESSES AND PRACTICES

The preparation for inspections and the documenting of inspection results is the same for all types of inspection. One of the principles of the Quality Policy of PAA is that its activities should focus on the most safety significant matters. However, there is limited evidence of implementing the principle.

The inspection methods used by PAA consist of document reviews, interviews, walk downs, observation of activities, etc.

PAA should develop process flowcharts for the various inspection processes in order to provide a clear image of all the components of the regulatory inspection programme, as well as of the interfaces, interactions and feedback loops between the inspection process and the other core regulatory processes (authorization, review and assessment, enforcement and development of regulations and guides). (See discussion on Management System, Section 4.1)

The results of inspections performed in radiation source facilities are reported and kept as hard copies at PAA and also stored in the Regulatory Data Management System. A copy of the inspection report is sent to the licensee. The report contains the results of the inspection and the corrective actions that need to be implemented

by the licensee. If during the inspection a serious violation is discovered the inspector, in accordance to the ALA, PAA can stop the practice immediately.

7.1.3 INSPECTORS

Please see section 3.3 for general information about inspectors and their qualification requirements.

PAA's personnel who perform inspections also participate in licensing and review and assessment activities.

7.2. INSPECTION OF RESEARCH REACTORS

Inspections are conducted in accordance with an annual inspection plan; for this purpose every year the PAA allocates particular equipment and financial resources.

Periodic (including announced and unannounced) inspections of MARIA research reactor are performed in accordance with Procedure 003/DBJ, Instruction 001/003/DBJ (Preparing Inspection), Instruction 002/003/DBJ (Conducting Inspection) and Instruction 003/003/DBJ (Reporting Inspection Result).

In accordance with Article 67e, Sections 1 and 2 of the ALA, the conclusions and results of inspections of nuclear facilities are included in an "Inspection Report" drafted by the PAA inspector. The inspection report is signed by the inspector, the head of the inspected organizational entity, and the person authorized by the head of the inspected organizational entity to represent him/her during the inspection, if applicable.

The unit of Nuclear Installation Inspection in PAA conducted a practical regular inspection on MARIA research reactor during the IRRS mission pursuant to Article 65 a, section 2 of ALA Act. In the inspection, three staff conducted the inspection, following an inspection plan prepared by the lead inspector. The inspection plan was officially provided to operators of the research reactor several days in advance. PAA inspectors and operators of MARIA research reactor held an entrance meeting, and PAA inspectors conducted interviews with the operators on the current state of the operation. The inspectors reviewed the documents prepared by the operators, and discussed the items to be checked. Following the inspection plan, they went to the site, and checked the facilities. After site inspection, they had an exit meeting, and explained the inspection results. The inspection activity was implemented on the basis of a procedure, instructions and an informed plan.

In 2012, there were seven inspections of MARIA research reactor executed by the Unit of Nuclear Installation Inspection. Six were executed as announced inspection, and one was executed as unannounced inspection. On average, 3–4 inspectors participated in an inspection of one-day duration. The scope and items to be inspected in the annual plan is set up at the beginning of every year, and the inspection items were in 2012 as follows; current states of the operation, MC fuel conversion, SAREMA (monitoring system of core and fuel), radiological protection, Mo-99 irradiation facilities, physical protection, start-up of the reactor, shutdown system and rector protection system, test of new fuel, Be and graphite block, performance of coolant pump, long-term maintenance.

Regarding EWA on November 1997, an inspection was executed by the PAA. The inspection covered confirmation of accomplishment of EWA decommissioning program, waste management during decommissioning, and compliance of the regulation of decommission. The IRRS team was provided documentation of the inspection.

The IRRS team was informed that no additional inspections of EWA have been performed.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: Requirement 27 of GSR Part 1 states that** *"The regulatory body shall carry out inspections of facilities and activities to verify that the authorized party is in compliance with the regulatory requirements and with the conditions specified in the authorization."*
(R11)	**Recommendation: PAA should perform periodic inspections at the EWA site to confirm that the authorized party had been in compliance with regulatory requirements, and the decommissioning activities had been performed safely.**

7.3. INSPECTION OF WASTE MANAGEMENT FACILITIES

Facility operators prepare reports on operation, maintenance, monitoring, inspection and testing programmes that are regularly submitted to the PAA. Review of these reports may lead to inspections when non-conformities are identified.

Procedures and instructions for inspection are maintained and implemented in the department of Nuclear Safety.

Inspection check lists are available for different inspection activities. PAA's inspection system is well elaborated and applicable. The graded approach is applied and deadlines for addressing non-compliances with regulatory requirements are defined with clear of responsibility to the operating organization. The head of the operating organization shall keep and archive an inspection logbook along with the inspection authorizations and protocols, e.g., in case of collecting samples. The use of the inspection logbook was verified during a site visit to the RWMP installations.

Currently, effective coordination among different inspection authorities with regard to waste facilities is common practice and inspection reports are exchanged, e.g., environment and state security agency, especially in the case of transport. The ALA regulates the creation and installation of the coordination system for nuclear facilities.

The team noted that the management of RWMP highly appreciated the constructive and formal input received from PAA inspectors as well of the management itself on safety issues.

The IRRS team noted that besides the operational monitoring performed by the licensee, additional and independent monitoring is performed by PAA via the Central Laboratory for Radiological Protection. The data for the Swierk and Różan facilities were reviewed by the IRRS team.

7.4. INSPECTION OF RADIATION SOURCES FACILITIES

Annually there are approximately 800 inspections performed and 500 authorizations issued. All premises where radioactive sources are used and/or stored are inspected by PAA regularly every 1 to 3 years, based on a graded approach depending on the type and extent of the practice. The main objective of an inspection is to validate that radioactive sources are used safely and in accordance with legislation and conditions set in the licence. Amongst other verifications, the inspector verifies the presence and location of each device containing a sealed source. Any discrepancies in licensing information concerning the location of sources, new sources acquired and sources transferred elsewhere, are subject to enforcement actions and the license may be amended accordingly.

Inspectors interview all levels of licensee staff and perform direct observation inspections in the field. Based on discussions with the licensee's staff, the IRRS team determined that the inspection staff fosters an open and cooperative relationship with the licensees.

Check lists are a tool used to conduct inspections for radiation source facilities. This approach minimizes variety of the content of inspections, but also reduces reliance on the expertise of the staff for determining the specific items to be examined. Procedures for inspecting medical practices are inadequate; specifically, the available

procedures do not address inspections of radiotherapy and nuclear medicine facilities including the performance of survey measurements in complex circumstances, such as accelerators or nuclear medicine laboratories.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: GS-G-1.3 Para 4.1 states that** *"To ensure that all nuclear facilities in a State are inspected to a common standard and that their level of safety is consistent, the regulatory body should provide its inspectors with written guidelines in sufficient detail. The guidelines should be followed to ensure a systematic and consistent approach to inspection while allowing sufficient flexibility for inspectors to take the initiative in dealing with new concerns that arise."*
(R12)	**Recommendation: The regulatory body PAA should develop procedures and guidance for medical facilities in addition to the current use of checklists. Such procedures and guidance should address inspections of medical facilities and the performance of survey measurements in complex circumstances.**

The inspections of radiation sources are typically announced a few days in advance; however, unannounced inspections are also performed. Inspection findings are presented in inspection reports (referred to as "protocols"). Information concerning inspections is entered in a database that is used to follow-up on inspection findings. The inspection documentation and enforcement decisions are reviewed by the management and the inspectors' conclusions are rarely revised. PAA's inspection findings are later communicated directly to the licensee in writing.

Accompaniment of Inspection at the Oncological Hospital in Warsaw:

IRRS team members accompanied two inspectors from the Radiation Protection Department of PAA to observe all inspection at the Nuclear Medicine Department of Oncological Hospital in Warsaw. The inspection verified elements related to occupational exposures according to a check list. The inspection included general safety arrangements such as radiation protection training of the staff and dose rate measurements to confirm adequate shielding of patient rooms -in the department for therapy patients. Communication with the licensee was open, in a very friendly manner with full cooperation of licensee staff. The IRRS team observed that the inspectors and licensee representatives have long-term familiarity with each other. The IRRS review team discussed with PAA the need for rotating inspectors to ensure that inspectors maintain an objective view of the licensees that they are regulating.

PAA sends inspection plans on medical facilities to the regional sanitary inspectors; however, no joint inspections involving inspectors from both organizations have been carried out in recent years. During the inspection at the Oncological Hospital, the RPOs explained to the IRRS team that there is overlap on the inspection by PAA and sanitary inspections. See suggestion in section 1.5. For controlling the medical facilities, co-operation with sanitary inspectors is recommended.

RPOs of the Oncological Hospital and the inspectors of the PAA informed the IRRS team that there is a requirement to notify CEZAR of PAA of any accidental exposure of workers and to notify sanitary inspectors of any incident concerning patients. However, in CEZAR the interpretation of the requirement was that they should be notified in all cases as a central contact point and they would inform other relevant bodies if necessary. Moreover, CEZAR confirmed that since they were established in 2005 no incidents concerning patients have been reported to them from hospitals either straight from hospitals or from sanitary inspectors. The provisions for the reporting of incidents and accidents should be considered within the context of actions taken in response to the suggestion related to coordination of authorities in Section 15.

Accompaniment of Inspection at the company Energomontaz Polnoc in Warsaw:

Through witnessing the inspection performed at company Energomontaz Polnoc the IRRS review team recognized the highly professional attitude of both, the inspectors and the licensee's representatives. The valuable role of radiation protection inspectors was also recognized.

7.5 SUMMARY

Inspections are performed by authorized inspectors. The IRRS review team noted that for the installations visited no specific concerns regarding nuclear and radiation safety were noted. Procedures, instructions and checklists for various types of inspections are available in both inspection departments; however, some additional procedures and instructions concerning medical practice inspections should be developed. Inspection reports were reviewed and it was found that these reports cover the scope of the inspection. Both departments maintain a registration system to collect the information related to their respective facilities.

8. ENFORCEMENT

8.1. ENFORCEMENT POLICY AND PROCESSES

The legal basis for enforcement is described in the chapter 15 of the ALA.

As a result of findings identified during inspections, different types of enforcement actions can be undertaken as described in the ALA.

In accordance with the ALA, enforcement powers are entrusted to PAA that apply to violations of regulatory requirements in cases when a notification is received or a licence is issued. Various enforcement tools are at the disposal of PAA including verbal warnings, written warnings, orders, fines and the initiation of criminal proceedings.

8.2. ENFORCEMENT IMPLEMENTATIONS

PAA has the authority to identify issues of concern and to set time limits for corrective actions for facilities and activities for which notification and/or authorization is required. The responsibility for safety lies primarily with the licensee, and as such, inspectors refrain from defining specific corrective actions to be taken. The inspectors ensure that the corrective action is reasonable and adequate through follow-up inspections. The most frequent level of enforcement is verbal warnings. An aspect of the verbal warning is thorough discussion of the technical issue, the safety aspect of the concern, the requirement not being met and the appropriate time limit for correction. Several examples of fines that are issued by PAA in response to violations of regulatory requirements were described by the PAA staff. Through interviews with the PAA inspectors, PAA managers, and inspected licensees, the IRRS team determined that this approach is well understood by all parties and is effective in regard to timeliness and safety significance.

8.3. SUMMARY

The IRRS team found that adequate enforcement measures are available to PAA and that they are implemented in a manner consistent with a graded approach.

9. REGULATIONS AND GUIDES

9.1. GENERIC ISSUES

The Polish legal system foresees issuing, adopting, promoting and amending safety regulations and guides, with consultation procedures concerning stakeholders including the general public. The President of the PAA informs stakeholders and the public of the principles and criteria for safety used as the basis for its regulations and guides, and of important changes in the regulatory framework by various means of communications including press releases, press conferences, the annual PAA report, brochures and also via the website of the PAA.

Primary safety requirements are contained in laws. The ALA is a detailed law with a significant amount of detailed provisions of a technical and procedural nature. Regulations provide further detailed requirements that are aimed at compliance with laws. PAA representatives indicated that the significant level of detail contained in their laws and regulations often removes the need for additional guidance on meeting these requirements.

Article 38 of the ALA specifies an obligation to take into account recommendations of the International Atomic Energy Agency when developing regulations which pertain to nuclear facilities. Also, international standards are taken into consideration when developing regulations concerning other facilities and activities regulated by PAA. Acts amending the ALA are also prepared taking account of the above standards.

PAA has preliminarily identified the need for additional guidance documents pertaining to the siting, design, construction, commissioning, and operation and licensing of nuclear facilities. PAA staff indicated that the development of these guidance documents has recently been initiated.

9.2. REGULATIONS AND GUIDES FOR RESEARCH REACTORS

Article 36d, section 3 of ALA, states that the Council of Ministers shall establish by regulation the scope and methods of safety analysis, and the scope of preliminary safety analysis reports in order to ensure that an appropriate analysis is made concerning the impact of the future facility on people and the environment. Relevant requirements were promulgated in "Regulation on the scope and method for the performance of safety analyses and the scope of the preliminary safety report for a nuclear facility." This regulation was prepared for nuclear power plants. However, the requirements also apply to nuclear facilities other than nuclear power plants such as research reactors and the characteristics of research reactors were not reflected sufficiently within the regulation. Therefore, certain aspects of the regulation are not appropriate for research reactors such as requirements pertaining to the reactor containment. Also, various features of research reactors such as experiment facilities, irradiation equipment and hot cells are not addressed within the regulation. This approach to establishing requirements for nuclear facilities could lead to a situation in which research reactors must comply with requirements that are not, in fact, applicable to their operations.

9.3. REGULATIONS AND GUIDES FOR WASTE MANAGEMENT FACILITIES

A set of 50 regulations have been established concerning nuclear and radiation safety, and security and safeguards. These apply to all facilities and activities. Several of these regulations apply to radioactive waste management facilities.

The Ministry of the Economy is currently amending the ALA as regards spent fuel and nuclear waste management and has prepared the draft of the National Plan of Radioactive Waste and Spent Nuclear Fuel Management. The regulatory framework is to be further revised taking into consideration EU regulations, including WENRA and IAEA safety standards.

The ALA and associated implementing regulations define requirements for the management of radioactive waste and spent fuel as well as requirements for decommissioning. The team observed that the system to classify radioactive waste complies with IAEA recommendations. However, the very low level waste category is not used and this type of waste is considered low level waste.

The team noted that a set of requirements from the IAEA safety standards related to radioactive waste management have not been taken up in the present regulations:

- the concept of clearance is not mentioned and the method applied for release of materials from the nuclear circuit is not formalised in the present regulatory framework. At present, materials are released on an "ad-hoc" approach. It is not clear what "clearance" values are used.
- minimisation of wastes is not formally referenced. However, data from existing practices demonstrate that very positive results were already obtained in reducing the amounts of radioactive waste. Isotope production facilities, for instance, reduced the volume of liquid wastes by a factor of 50 by adapting the production process (from wet to dry).
- attention should be given to the waste management processes in order to avoid possible reconditioning of wastes or reclassification of waste which would require deep geological disposal. This stresses the need of clear waste acceptance criteria and the need for guidance on the methodology to be used for deriving such criteria from the safety case. A methodology for deriving waste acceptance criteria from the safety case should be developed. Specific attention should be given to the derivation of the criteria, on uncertainty treatment and error propagation, as well as on scenario development.

According to the ALA, financial responsibility for decommissioning as well as for radioactive waste and spent nuclear fuel management coming from commercial facilities such as NPP's, are with the operator. The ALA establishes relevant provisions for construction, decommissioning and radioactive waste and spent nuclear fuel management.

In order to ensure the availability of funds for decommissioning, the so-called "Decommissioning Fund" related to the development of nuclear power, will be reserved for decommissioning of facilities even in the event of the bankruptcy of the operator.

A delay in the development of a final solution for all types of wastes may have a negative impact on the waste already generated (ageing phenomena such as the corrosion of the cladding material of the EK-10 fuel in the past; tritium leak under facility 2 of the Rozan NRWR) and that will be generated in the future due to the absence of appropriate waste acceptance criteria for disposal.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: GSR Part 1 requirement 32 states that "***The regulatory body shall establish or adopt regulations and guides to specify the principles, requirements and associated criteria for safety upon which its regulatory judgements, decisions and actions are based."* **BASIS: GSR Part 1 requirement 33 states that "***Regulations and guides shall be reviewed and revised as necessary to keep them up to date, with due consideration taken of relevant international safety standards and technical standards and of relevant experience gained."*
(2)	**BASIS: GSR Part 5 requirement 11 states that** *"Waste shall be stored in such a manner that it can be inspected, monitored, retrieved and preserved in a condition suitable for its subsequent management. Due account shall be taken of the expected period of storage, and, to the extent possible, passive safety features shall be applied. For long term storage in particular, measures shall be taken to prevent degradation of the waste containment."*

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: GSR Part 5 requirement 12 states that "***Waste packages and unpackaged waste that are accepted for processing, storage and/or disposal shall conform to criteria that are consistent with the safety case."*
(1)	**BASIS: SSR-5 requirement 20 states that:** "*Waste packages and unpackaged waste accepted for emplacement in a disposal facility shall conform to criteria that are fully consistent with, and are derived from, the safety case for the disposal facility in operation and after closure."*
(2)	**BASIS: GSR Part 1, para. 2.3 states that** *"National policy and strategy for safety shall express a long term commitment to safety … In the national policy and strategy, account shall be taken of the following (d) the need and provision of human and financial resources."*
(R13)	**Recommendation: Government should use the opportunity presented by the new NPP initiative to bring their regulations in line with IAEA standards on RW and SNF management, in order to enhance safety and transparency, and to develop a methodology on deriving waste acceptance criteria for disposal.**
(S8)	**Suggestion: In its PNPP activities, the Government should consider that any delay in deciding on a firm waste management strategy may have consequences not only for the development of the waste package and its content, but also for establishing the necessary funds, since it will not be clear on the basis of what scenario the provisions will have to be calculated.**

9.4. REGULATIONS AND GUIDES FOR RADIATION SOURCES FACILITES

All safety requirements for radiation sources are recorded in the ALA and subsidiary regulations. The Minister of Health is responsible for developing guidance for the safe use of radiation medical practices. Non-formal guidance concerning the process of applying for authorization is available via PAA's website.

9.6. SUMMARY

Poland has established regulations and guidance aimed at ensuring the safety of facilities and activities. PAA representatives indicated that the significant level of detail contained in their laws and regulations often removes, the need for additional guidance on meeting regulatory requirements. PAA should use the opportunity presented by the new NPP initiative to bring their regulations and guides in line with IAEA standards.

10. EMERGENCY PREPAREDNESS AND RESPONSE

10.1. GENERAL REQUIREMENTS

Basic responsibilities

The law on Crisis Management of 26 April 2007 (Crisis Law) specifies authorities responsible, their tasks and general principles for crisis management, as well as the rules of financing crisis management tasks. In accordance with Article 5 of the Crisis Law, crisis management plans shall be established at all levels (national, regional, and municipal) and in all jurisdictions. According to the Crisis Law, the Government Centre for Security (GCS) operates as a national coordinating authority as part of the crisis management system in Poland; however, for radiation emergency events (preparedness, response and recovery phase) at a national level in terms of para. 3.4 of GS-R-2, the leading role is played by the MoInt.

The governor of a region carries regional responsibility for protection of the public in case of a radiation emergency.

All authorities in Poland have obligations for emergency preparedness and response within their purview. In accordance with the Crisis Law and Ref. [RPM-2011-04], the GCS serves as a national secretariat for the Governmental Crisis Management Team during crisis situations. The governmental authorities having significant roles in emergency response are obliged by Ref. [RCM-2009-12] to organize their own crisis management centres.

In order to manage crisis situations in a proper and effective manner, the Governmental Crisis Management Team (GCMT) was established by Art 8 of the Crisis Law to support the Council of Ministers. The MoInt plays a key role in implementation of protective and other actions in case of radiation emergency on national level. The Government Centre for Security supports GCMT. The President of the PAA is a member of GCMT in the event of a radiation emergency on a national level including terrorist attacks related to sources of ionising radiation. Fig. IX.1 of Appendix IX shows the position of PAA at a national level of emergency preparedness and response. According to the ALA and secondary regulations, the responsibility for taking action to eliminating threats and remedying the consequences of radiation emergency is as follows:

- entity / facility level (on-site) – the actions aimed at the elimination of the threat and of the consequences of the emergency are directed by the head of the organizational entity on whose site the emergency has occurred;
- regional level – the actions aimed at the elimination of the threat and of the consequences of the emergency are directed by the regional governor in cooperation with the state regional sanitary inspector according to the regional emergency plan;
- country level (national scale) – the actions aimed at the elimination of the threat and of the consequences of the emergency are directed by the minister competent for home affairs, with the assistance of the PAA's President;

The ALA defines the responsibilities of the regulatory body in relation to emergency preparedness and response as follows:

- To receive and verify the information on radiation emergencies;
- To provide immediate assistance in the assessment of the radiation hazard magnitude, and to advise on the elimination of the threat and on the emergency consequences;
- To establish national contact on points;

- On the basis of the assessment of the national radiation situation to prepare information for the public, Governor of the region, Cabinet of Ministers and chairman of the appropriate governmental emergency management committee.

In event of national radiation emergency the President of the PAA, as a member of GCMT, plays a key role of advisor to the government. In the event of regional or facility emergency the President of the regulatory body PAA plays key advisory role for the regional governor and licensee with regard to nuclear safety and radiation protection, i.e., also in respect to any radiation emergency. In accordance with ALA the regulatory body established the Radiation Emergency Centre CEZAR. The CEZAR is a national focal point for monitoring and warning as presented in Fig. IX.2 of Appendix IX.

Assessment of hazards (threats)

Article 5a of the Crisis Law states that for the purposes of the National Crisis Management Plan, the ministers in charge of the government administration units, the heads of central offices and regions shall compile a report on threats to national security. Coordination of the preparation of the report is ensured by the Director of the GCS. Only radioactive contamination of the territory of Poland is classified as a radiological threat and is considered a radiation emergency of national level.

The assessment of radiation risks in Poland is prepared on the basis of information transmitted by competent organs including the President of the PAA. On request of governors, the President of the PAA provides information about radiation sources at territories under their responsibility. The regional reports on threats to security and the respective Crisis Management Plans are updated at least in two year periods. Regulations on the categorization and evaluation of radiological threats have not been established in Poland. PAA does not use categorisation of threats as required in GS-R-2.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: GS-R-2 para. 3.6, 3.7 states that:** *"Threat categories are used <...> to implement a graded approach to establishing and maintaining adequate arrangements for preparedness and response by establishing requirements that are commensurate with the potential magnitude and nature of the hazard as identified in a threat assessment."* **GS-R-2 para. 3.15 states that:** *"The nature and extent of emergency arrangements [for preparedness and response] shall be commensurate with the potential magnitude and nature of the [threat]... associated with the facility or activity. The full range of postulated events shall be considered in the threat assessment.... The threat assessment shall be so conducted as to provide a basis for establishing detailed requirements for arrangements for preparedness and response by categorizing facilities and practices consistent with the five threat categories shown in Table I <of GS-R-2>."*
(R14)	**Recommendation: To implement a graded approach to establishing and maintaining adequate arrangements for preparedness and response the Government should establish regulations on the categorization of threats in accordance with GS-R-2 and liaise with relevant organizations, to conduct the assessment of hazards at the national level.**

10.2. FUNCTIONAL REQUIREMENTS

Establishing emergency management and operations

The ALA and Ref. [RPM-2007-02] specify that the emergency preparedness and response plan for radiation emergencies is a part of the documentation submitted within the application for a licence, and the requirements

for the plan, its content and for the exercising of the plan and actualisation are stated in Ref. [RCM-2002-12/1. The National Crisis Management Plan (NCMP) was developed in the Government Centre for Security, with the participation of representatives from relevant government organs. The NCMP includes one part which is devoted to radiation emergencies on a national level.

The crisis management system in Poland is developed in accordance with the Crisis Law and consists of many levels and comprises the following components:

- Crisis management organs,
- Opinion-giving and advisory organs competent for initiating and coordinating actions to be taken in crisis management,
- Crisis management centres operating 24/7 and prepared to deploy suitable measures

Crisis management plans are developed on each administrative level and the IRRS team found that the roles and tasks of organs and entities with roles in the crisis management system are clearly defined. The crisis management system for radiation emergencies at the national level is given in the Fig. IX.3 of Appendix IX.

The regional emergency preparedness and response plan in the event of a radiation emergency constitutes an integral part of the Regional Crisis Management Plans. The National Crisis Management Plan takes into account in whole the tasks and interactions of organs and services responsible for the elimination of threat and removal of consequences of radiation events on the national scale as stated in Ref. [RCM-2007-02].

PAA is responsible for performing the tasks involving the assessment of national radiation situations under normal conditions and in radiation emergency situations, and the transmission of relevant information to appropriate authorities and to the general public. The President of PAA is a member of the GCMT and plays a key advisory role to the government and response organizations with respect to nuclear safety and radiation protection. The CEZAR provides for all PAA activities related to the assessment of the national radiation situation, to the radiation emergency information exchange and content-related assistance for stakeholders.

The response to a radiation event on-site is conducted according to the on-site emergency plan in cooperation with off-site services (police, fire brigade, medical service etc.) if necessary and under content-related supervision of the President of PAA through CEZAR.

The response to a radiation event at the regional level is conducted according to the regional radiation emergency plan, directed by the regional governor in cooperation with the state regional sanitary inspector, in co-operation with local services (fire brigades, medical teams) and under content-related supervision of the President of PAA through CEZAR.

The response to a radiation event on the national level is conducted according to the National Radiation Emergency Plan incorporated in the Crisis Management Plan and it is directed by the MoInt, with the assistance of the President of PAA.

The IRRS team concludes that CEZAR is well established and functioning effectively in regard of existing hazards (threats) in Poland. However, the IRRS team concludes that PAA should change the procedures with respect to the involvement of CEZAR in the licencing and inspection processes.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: GS-R-2 para 5.19 states that:** *"This emergency plan shall be co-ordinated with those of all other bodies having responsibilities in an emergency, including public authorities, and shall be submitted to the regulatory body"*
(S9)	**Suggestion: PAA should consider how to enhance and formalize the involvement of CEZAR staff in the licencing and inspection processes.**

Identifying, notifying and activating

The CEZAR is, according to the ALA, appointed as the national and international notification point and it fulfils the role both as the National Competent Authority (both domestic and abroad) and the National Warning Point. The CEZAR duty officer system ensures 24/7 service.

The CEZAR also performs actions aimed at making analyses and evaluating the radiological situation in the country under normal and radiation emergency conditions, it participates in organizing measures in case of radiation emergency situations and co-ordinates the actions of stations of the Early Warning System (EWS) for detection of radioactive contamination and units measuring radioactive contamination of the environment and foodstuffs.

In respect to construction of the new NPPs in Belarus and Kaliningrad, the government should perform assessment of resources and capabilities of the national monitoring system (Early Warning System and units measuring radioactive contamination of the environment and foodstuffs). This should constitute the basis for extension of the radiation monitoring system as appropriate.

Poland is a party of the Convention on Early Notification of a Nuclear Accident, the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency and the Convention on Nuclear Safety. It has bilateral agreements with neighboring countries on early notification of nuclear accidents and on co-operation in the field of nuclear and radiation safety. However in respect to construction of the new NPPs in Belarus and Kaliningrad, Poland should consider extending existing bilateral agreements.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: GS-R-2 para 5.12 states that:** *"Arrangements shall be made to ensure that all States within defined emergency zones are provided with appropriate information for developing their own preparedness to respond to an emergency and arrangements shall be made for appropriate transboundary co-ordination*."
(S10)	**Suggestion: The Government should consider enhancing the bilateral agreements with the Russian Federation and Belarus to reflect the potential new NPPs situated near the Polish border.**

Fig. IX.2 of Appendix IX shows a generic scheme of identifying, notifying and activating the response system in event of radioactive contamination in Poland. The system of monitoring radiation situation at Poland in which are also included the most important licensees can be seen from the Fig. IX.4 of Appendix IX. The system for monitoring radiation situation in Poland consists of: the Early Warning System; the Radioactive Contamination Control Units; and Local Monitoring Systems. The IRRS team has learnt that also Veterinary Inspection also operates laboratories which provide measurements in order to determine radionuclide content in meat, eggs and milk. These laboratories are not included in the system of the above- mentioned units. The IRRS teams concluded that laboratories of Veterinary Inspection should be considered for inclusion within the system for monitoring the radiation situation in Poland.

In accordance with the ALA, the head of organizational entity whose workers may come into contact with orphan sources during their work, in particular the head of organizational entity, which stores, sells or processes scrap metal, is obliged to provide such workers with basic training on radiation protection measures for emergency response.

Taking mitigatory actions

In the case of a radiation event during transport or field work, the licensee, in cooperation with the regional governor (and the state regional sanitary inspector, if necessary), takes measures to mitigate the consequences of the emergency and to establish, were necessary, the precautionary action zone, evacuate affected people, determine the predicted progress of events, and prepare communication with the public, in accordance with the regional emergency preparedness and response plan.

In case of a radiation emergency on a regional scale (including a terrorist act, emergency caused by an unknown perpetrator, increased ionizing radiation dose rate or occurrence of radioactive contaminations) the Regional Governor takes measures to identify the nature of the type and activity of radioactive material, establish, were necessary, the precautionary action zone, evacuate affected people, determine the predicted progress of event, and prepare communication to the public, in accordance with the regional emergency preparedness and response plan in the case of a radiation event.

The licensee and the Regional Governor is responsible for notifying the President of PAA about a radiation event and for keeping him informed about the emergency development and relevant response. The exchange of information and data between the Regional Governor and the President of PAA is performed through the CEZAR.

Taking urgent protective action

The ALA Chapter XI specifies a set of intervention actions and the mechanism for initiating these actions. For severe cases, intervention levels are defined for evacuation, and temporary or permanent relocation of people. Detailed guidelines and requirements concerning this issue are specified in Refs. [RCM-2007-02], [RCM-2004-04/2].

The crisis management plans specify the tasks of organs and services (e.g. fire brigades, police, border guards, customs, soldiers) with regard to the performance of protective and intervention actions in case of an emergency relating to the occurrence of natural disasters, contamination of the environment (chemical, biological, radioactive contamination) and severe technical accidents, including organization of evacuation from endangered areas and organization of rescue teams, medical care, social assistance and psychological support. During a radiation emergency on a regional level, the Region's Governor responds in accordance with the regional radiation emergency plan, which is attached to the regional crisis management plan. The regional governors have established plans and procedures, regarding intervention measures for case on radiation emergency, including the stable iodine prophylaxis according to the requirements of the ALA.

Providing information and issuing instructions

According to the ALA PAA is established as the leading entity to provide warning and thus the CEZAR is the department which ensures:

- in case of a possible radiation emergency on a regional/national level resulting from event in other country or radiation emergency on regional/national level not caused by the Polish licensee, the prior information is sent to the governors of the region where there are possible consequences of the emergency event
- information about the radiation emergency is sent to the Minister of Interior (a copy of this information is sent also to the Government Centre for Security)
- in case of radiation emergency warnings and information are published on the webpage www.paa.gov.pl in the section "News"
- a map of Poland with results of gamma dose rate measurements is updated daily on the webpage www.paa.gov.pl.

Protecting emergency workers

The arrangements for protection of emergency workers are defined by the Article 20 of the ALA, including requirements for limiting, controlling and registering individual doses in line with GS-R-2.

In the case of an emergency on a facility level, the first responders would be the radiation specialists or employees instructed by the radiation protection officer of this facility. All the employees of such facilities who work with sources of ionizing radiation, nuclear material, radioactive waste, spent nuclear fuel or who work in nuclear facilities must have knowledge, skills and shall be properly trained. Emergency workers must be informed about the risks related to the ionizing radiation. All necessary protective measures should be in place to minimize exposure. In accordance with the Ref. [RCM-2007-03], provisions on the registration of individual doses apply also to the registration of individual doses absorbed by individuals in the situation of extraordinary exposure, i.e. also by emergency workers.

The ALA specifies the requirement for the persons responsible for actions aimed at the management of consequences of radiation emergency, to provide proper protection for emergency workers. In case of an emergency at the facility level, that person would be the head of organizational entity and radiation protection officer. In the case of a radiation emergency when the state is involved (emergency on regional or national level), the person responsible would be the regional governor or the Minister of Interior with the President of PAA.

Assessing the initial phase

Operational intervention levels for radiological emergencies are in place and in accordance with the Ref. [RCM-2007-02], the levels for the establishment of an emergency zone are either the gamma radiation dose rate at the level of 100 μSv/h or the presence of any impermanent (removable) radioactive contaminations. Regulations on emergency planning zones around nuclear facilities have not been established.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**GS-R-2 para. 4.48 states that:** *"For facilities in threat category I or II arrangements shall be made for effectively making and implementing decisions on urgent protective actions to be taken off the site. ,<...> These arrangements shall include the <...> specification of off-site emergency zones for which arrangements shall be made for taking urgent protective action. These emergency zones shall be contiguous across national borders, where appropriate."*
(R15)	**Recommendation: The Government should establish regulations on emergency planning zones around facilities in threat categories I and II in accordance with GS-R-2.**

Keeping the public informed

Arrangements for providing useful, timely, truthful, and consistent information to the public are specified in the ALA (Article 80, 81, 92), Refs. [RCM-2007-02], [RCM-2004-04/1] and the Crisis Act. The organization of the system of threat monitoring, warning and alarming in the event of radioactive contamination is shown in Fig.IX.2 of Appendix IX. The IRRS team identified that the current arrangements for providing information to the public are well established and they were applied effectively, for example, during the Fukushima accident in 2011.

10.3. REQUIREMENTS FOR INFRASTRUCTURE

Relationships and interfaces between all the major response organizations at the regional level are specified in the regional radiation emergency plan (incorporated in the regional crisis management plan) and at national level

in the national radiation emergency plan incorporated in the National Crisis Management Plan (overall coordination of the event), which specifies management and coordination actions for prevention, preparedness, response, and recovery phase. More details are provided by the Ref. [RCM-2007-02] and [2004-04/2].

The head of organizational entity prepares and submits to the President of PAA for approval an on-site emergency preparedness and response plan which is one of the documents required when submitting an application to issue a license for the performance of activities involving exposure or when submitting a notification about the performance of such activities as provided in Ref. [RCM-2002-12/1].

Periodic reviews are carried out of the emergency preparedness and response plan for a radiation emergency, and exercises at national, regional and facility levels are conducted. The IRRS team found that the approach to, and frequency of the exercises, meets the requirements of GS-R-2.

The team noted that PAA does not have a system for quality assurance of emergency preparedness and response. For instance, comparative measurements for basic and special units as referred to in the [RCM-2002-12/2] are organized by the President of PAA with the frequency of at least once a year for basic units and at least once in 2 years for specialist units. However, the comparison (calibration) of the EWS in order to verify the proper functionality of each station is not conducted.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: GS-R-2 para. 5.37 states that:** "*The operator of a facility, practice or source in threat category I, II, III or IV and the off-site response organizations shall establish a quality assurance programme, in accordance with international standards, to ensure a high degree of availability and reliability of all the supplies, equipment, communication systems and facilities necessary to perform the functions specified in Section 4 in an emergency 89, 90 (see para. 5.25)<GS-R-2>".*
(S11)	**Suggestion: To ensure a high degree of availability and reliability of all equipment, communication systems and facilities necessary to perform off-site response, PAA should establish its own quality assurance programme which should also include requirements for the test and calibration of the early warning system.**

10.4. SUMMARY

Emergency preparedness and response in Poland has the necessary legal grounds. The national emergency plan and its implementation provide for efficient response to nuclear or radiological emergencies. The general impression of the IRRS team was that planning for radiation emergencies is taken seriously in Poland as for any other emergencies.

PAA has a relevant role in the national emergency infrastructure and has a dedicated organizational unit, CEZAR, devoted to emergency preparedness and response. Nonetheless, the IRRS team found issues that should be prioritized to be fully in line with IAEA safety standards. In particular, PAA should implement a graded approach to establishing and maintaining adequate preparedness and response arrangements and establish regulations on emergency planning zones around facilities in Threat categories I and II in accordance with GS-R-2. The IRRS team also identified a number of potential areas for improvement.

11. TAILORED MODULE FOR COUNTRIES EMBARKING ON NUCLEAR POWER (SSG-16)

11.1 INTRODUCTION TO TAILORED MODULE FOR COUNTRIES EMBARKING ON NUCLEAR POWER

Scope of the review of the tailored module

During the IRRS preparatory meeting, Poland requested the inclusion of the tailored module for countries embarking on nuclear power to be included in the scope of the IRRS, specifically for countries in Phase 2 – Safety infrastructure preparatory work for construction of a nuclear power plant after a policy decision has been taken. As stated in the IRRS Guidelines, this tailored module comprises a review against actions set out in IAEA Safety Guide SSG-16, "Establishing the Safety Infrastructure for a Nuclear Power Programme," and the IAEA Requirements that the actions are based.

SSG-16 addresses the roles of the government, regulatory body, and operating organization. It should be noted that for the implementation of an IRRS mission as related to a State's development of its nuclear power regulatory infrastructure, the SSG-16 actions considered would be those to be implemented by the government and/or the regulatory body. Regarding actions directed to the operating organization(s), the focus of the IRRS review is limited to consideration of appropriate regulatory framework in place or planned, such that the required actions would be taken by the operating organization.

As the actions provide a framework for the implementation of the safety infrastructure consistent with IAEA safety standards and Poland has a well-established regulatory framework for the oversight of the facilities and activities within its purview, there is overlap within the scope of the elements of SSG-16 and of the IRRS modules. The documentation of this IRRS mission for the areas of overlap is such that the IRRS team will document its review within the IRRS modules and provide the appropriate references in the SSG-16 elements and limit the discussion in the tailored module to the supplemental information in support of the nuclear power programme**.**

Summary of the Poland Nuclear Power Programme

In 2009, the Polish Council of Ministers approved the National Energy Policy to 2030, which included the introduction of nuclear power by 2023, and nuclear electricity generation of up to 17% of the energy mix by 2030.

Also in 2009, the Polish Council of Ministers issued a resolution on preparation of the Polish Nuclear Power Program (PNPP). It identified PE SA as a project company for the first Polish nuclear power plant.

A Draft PNPP dated January 2011 was developed by the Ministry of Economy, outlining the national justification for introducing nuclear power as well as the scope, structure and assignment of responsibilities to ensure safe and effective operation of nuclear power including spent fuel and waste management and decommissioning. The ALA of 29 November 2000, as amended in 2011, provides the basic legislative framework for the nuclear power programme. It identifies the PAA as the main nuclear regulatory body.

PAA is currently conducting Phase 2 activities as defined in SSG-16. In this regard part of the infrastructure (in particular for nuclear safety) already exists requiring only to be expanded to cover the additional needs of the nuclear power programme. In other words, there is already a legal and regulatory framework in place; a regulatory body that oversees the activities of the existing nuclear facilities; an emergency plan to cover events/accidents related to radiation sources and nuclear facilities.

Taking the above into consideration, the focus of the IRRS review is on PAA's state of preparedness and progress with regard to Phase 2 activities.

11.2 CONSIDERATION OF ELEMENTS OF SSG-16

Each of the SSG-16 elements is considered in the following sections. SSG-16, Element 18 on Preparation for Commissioning does not contain any actions in Phase 2 and is therefore out of the scope of this IRRS.

11.2.1 SSG-16 Element 01 National Policy and Strategy

The IRRS team's views on the Polish national policy and strategy for nuclear safety infrastructure are set out in IRRS Section 1.1 in this report. Additional observations with regard to the development of an infrastructure for a new nuclear power programme are considered below.

The *Polish Nuclear Power Program* (PNPP) outlines the scope and structure of activities needed to implement the nuclear power, ensure safe and effective operation of the nuclear power facilities and their decommissioning and develop a safe procedure of management of spent nuclear fuel and radioactive waste. The PNPP sets out a clear national policy and strategy for the development of a nuclear power programme in Poland. The PNPP summarises the principles relating to the priority that should be given to safety in the operation of a nuclear facility. It notes that the head of the organisational unit which performs regulated activities is responsible for ensuring safety. The role of the President of the PAA, as the national regulatory body, is also set out, and his key responsibilities and powers with regard to nuclear safety and radiological protection are summarized. Reference is made to those parts of the ALA which provide the legal bases for these responsibilities and to some of the major steps that must be taken when developing a new NPP programme. The PNPP also makes clear the need for effective collaboration and communication between all stakeholders involved in the development of a new NPP Programme in order to ensure safety. It further acknowledges that Poland will benefit from the active participation in the international co-operation. Of particular note is the policy, now captured in the ALA, relating to the right of the general public to have access to written information about the status of nuclear safety and radiological protection of the nuclear facility. Wider obligations on public communication, as a matter of policy and legal duty, are also summarized.

The IRRS team considered the PNPP comprehensive in its description of the developing legal and wider national infrastructure needed to support a nuclear power programme. It addresses the relevant IAEA standards and expectations, and refers to the legal bases through which safety will be assured throughout the life cycle of a new NPP. However, the IRRS team was informed that approval of the PNPP has been delayed owing to trans-boundary consultations and is expected around June 2013.

The IRRS team discussed the approach that the Polish government has put in place to promote knowledge transfer to support the developing safety infrastructure for the NPP programme. The team noted that the government has put in place a number of agreements with organizations in other states involved in the nuclear power programme (see summary in SSG-16 Element 2 below). The government has further engaged with organisations within Poland to promote the development of a national capability to support a long-term nuclear power programme. This is in its early days, and includes interaction with academic and research institutions. As the NPP programme develops, it will be important for all parties participating in the programme – regulator, constructor, operator and polish supply chain companies – to have the capability and capacity to deliver safe, effective and efficient performance, and government will need to periodically review the national strategy for securing that resource.

11.2.2 SSG-16 Element 02 Global nuclear safety regime

The IRRS team's views on Polish participation in the global nuclear safety regime are set out in Section 2 in this report.

With regard to the proposed nuclear power programme, the IRRS team found that Poland participates in the global nuclear safety framework. It is a party to the principal nuclear safety and radiological protection conventions and has implemented those relevant to the nuclear power programme. Poland is a member of the principal IAEA safety standards committees (e.g. NUSSC, RASSC) and participates in regional IAEA technical cooperation projects. It also attends relevant Nuclear Energy Agency working groups including WGRISK,

WGIP and WGRNR and is a member of ENSREG. Poland has observer status with WENRA, and has also transposed the WENRA reference levels into Polish regulations.

The IRRS team also found that Poland has established bilateral arrangements with both neighbouring countries and the US and French regulatory authorities as well as potential NPP vendor countries. The exchanges with the US NRC have focused on staff training and sharing of software codes with the French ASN interactions relating principally to processes and procedures. The IRRS team suggested that Poland might also seek to put in placed bilateral information and experience exchange arrangements with countries that have recently reintroduced a new NPP programme and have revised their processes and guidance to accommodate this programme and bring guidance and processes up to date.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: GSR Part 1 R14 states that** *"The government shall fulfil its respective international obligations, participate in the relevant international arrangements, including international peer reviews, and promote international cooperation to enhance safety globally."* ***SSG16 Action 14 states*** *"All the relevant organizations should participate in the global nuclear safety regime."* **SSG16 "Action 16 states that"***All relevant organizations should strengthen their cooperation on safety related matters with States with advanced nuclear power programmes."*
(S12)	**Suggestion: PAA should consider extending bilateral exchange agreements to share experiences with other countries embarking on, or expanding, its NPP programme.**

11.2.3 SSG-16 Element 03 Legal framework

The essential elements of a national legal framework for the nuclear safety infrastructure, including NPPs are to a large extent addressed through the ALA and regulations as revised in 2011 (see IRRS Section 1.2).

An Act of Law in 2011 further sets out detailed requirements relating to the preparations for investing in a nuclear power project, including the enabling actions needed for the "decision in principle" that is required in law before an application for a construction permit can be made. This decision is made by the Minister for Economy after consultation with the Head of the Internal Security Agency. The IRRS team noted that this process appears to be a robust and comprehensive mechanism for ensuring that all relevant matters are considered before construction proceeds.

PAA developed 14 new regulations that have been issued to implement the requirements in the ALA and enables the PNPP to be implemented when it is approved. The IRRS regards the early introduction of these regulations as a good practice, which enables all stakeholders to understand their responsibilities and develop arrangements to implement them. They were developed following a review of IAEA standards, WENRA expectations, European Utility Requirements specifications and a consideration of practices in other states. The regulations set out, among other things, the legal framework for site assessments from a nuclear safety perspective, and the basic requirements concerning the scope and methods for conducting safety assessments in a preliminary safety report. The IRRS team found that the revised ALA, especially Chapter 4, plus the full range of regulations provide a comprehensive legal basis for ensuring that safety is at the heart of decisions affecting the development and implementation of a new nuclear power programme.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: GSR Part 1 Requirement 2 states that:** *"The government shall establish and maintain an appropriate governmental, legal and regulatory framework for safety within which responsibilities are clearly allocated."* **SSG-16 A20 states that:** *"The government should identify all necessary elements of a legal framework for the safety infrastructure, and should plan how to structure it and develop it."*
(GP4)	**Good Practice: Poland has introduced changes to the ALA and regulations, including those related to decommissioning, at an early stage in the NPP program**.

11.2.4 SSG-16 Element 04 Regulatory framework

The IRRS team's review on the independence of the regulatory body, and the appointment of senior managers, is provided in Section 1.3 in this report. The legal authority of PAA to maintain adequate regulatory oversight is considered in Element 3 of SSG-16 in this report.

With regard to the developing technical and managerial competence of PAA to provide suitable regulatory oversight of a new nuclear power programme, it is notable that in 2011, and in order to be better able to implement the revised ALA, an Order of the Minister of Environment introduced a new statute for PAA. The President of PAA subsequently approved a restructuring of the regulatory body in order to be better prepared for a new reactor build programme. This includes establishing a nuclear installation assessment unit as well as a reactor technology unit. The government has empowered PAA to recruit an additional 39 persons which represents a significant increase on the existing cadre - human and financial resources are considered further in Elements 8 and 6 respectively of SSG-16 in this report.

The team discussed the overall regulatory approach. Building on the existing regulatory philosophy of PAA, a non-prescriptive approach is adopted which allows the operating organization flexibility in determining how to meet the established safety goals.

The essential requirements of the process for licensing new NPPs are set out in the ALA and regulations. At present, PAA has not produced guidance on its expectations of the licensing process although it has recognized the need to produce such a document and drafting is in progress. The IRRS team encourage PAA to consider setting out a step by step statement of its expectations on the NPP licensing process to provide clarity for prospective applicants, other stakeholders and the public. PAA may also wish to consider stating how they plan to engage with the licence applicant and how the licensing process will be implemented in practice.

Although the ALA sets out the legal regulations relating to nuclear activities, these regulations by their nature cannot describe all PAA requirements and expectations with regard to interpretation of these regulations. These may be set out in guidance which provides a framework for informing regulatory assessments and ensuring that regulatory staff works in a consistent way, as well as helping to make regulatory expectations and processes open and transparent. This guidance may be produced by the regulatory body or the body may decide to endorse documents produced by other international bodies. The IRRS team found that PAA does not currently have an endorsed set of such documents, and there is no clearly defined programme for their production. PAA have to date focused on developing the binding regulations following revision of the ALA. For a country engaged in Phase 2 (SSG-16) activities, the IRRS team expected more progress to have been made in planning the production or endorsement of these guides, especially those relevant to early stages of the new build programme – including siting assessment and the fundamental organisational development of a prospective licensee. The

IRRS team encourage PAA to consider its approach to identifying its needs and producing a programme for their delivery.

The IRRS team found that interactions between PAA and PGE to discuss PAA expectations for the licensing process have been limited to date, although there has been good discussion on the development of regulations. There have been some working level interactions, but more discussions have taken place at senior levels. This is understandable for the early stages of development of a new NPP programme when high level matters such as schedules, policy matters and working relationships need to be established. However, there would be benefit in PAA working with PGE to put in place a framework for more regular meetings at all levels so that the PAA can inform PGE, understand the way PGE is proposing to take the NPP programme forward, and both sides can work together to identify early warning signs such as gaps in understanding regarding regulatory expectations and programme matters.

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: GSR Part 1 R32 states that:"***The regulatory body shall establish or adopt regulations and guides to specify the principles, requirements and associated criteria for safety upon which its regulatory judgements, decisions and actions are based."* **BASIS: GSR Part 1 R34 states that:***"The regulatory body shall notify interested parties and the public of the principles and associated criteria for safety established in its regulations and guides, and shall make its regulations and guides available."* **SSG-16 A30 states that: "***The regulatory body should issue regulations and guides specifying the documentation and procedures necessary in the various steps of the licensing process and inspections to be conducted."*
(S13)	**Suggestion: PAA should consider clarifying the steps necessary in the licensing process to elaborate on the existing provisions of the ALA, and communicate them internally and externally.**

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: GSR Part 1 R32 states that:***"The regulatory body shall establish or adopt regulations and guides to specify the principles, requirements and associated criteria for safety upon which its regulatory judgements, decisions and actions are based."* **GS-R Part 1 para 4.62 states that:***"The regulations and guides shall provide the framework for the regulatory requirements and conditions to be incorporated into individual authorizations or applications for authorization. They shall also establish the criteria to be used for assessing compliance. The regulations and guides shall be kept consistent and comprehensive, and shall provide adequate coverage commensurate with the radiation risks associated with the facilities and activities, in accordance with a graded approach."*
(S14)	**Suggestion: PAA should consider defining a strategy for production or endorsement of internal guidance which specifies the principles, requirements and associated criteria for safety used to inform regulatory judgements, decisions and actions taken during the review and assessment of material submitted as part of licence applications.**

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	**BASIS: GS-R Part 1 para 4.24 states that:**"*The regulatory body shall foster mutual understanding and respect on the part of authorized parties through frank, open and yet formal relationships, providing constructive liaison on safety related issues."* **SSG-16 A32 states that:"***The regulatory body should begin establishing a suitable working relationship with the operating organization and with international organizations*."
(S15)	**Suggestion: PAA should consider strengthening its pre-licensing interactions with prospective NPP applicants to support a shared understanding of regulatory expectations.**

11.2.5 SSG-16 Element 05 Transparency and openness

The IRRS team's consideration of the Polish government approach to communicating and consulting with interested parties and the general public is set out in Section 3.8 of this report. With regard to the new nuclear power programme, it is notable that the government has initiated work to prepare and educate the general public to understand the nature of the nuclear power programme. The approach it has adopted is to provide information about nuclear power, so that the public is able to reach an informed judgement, rather than actively endorse it. A variety of media have been used, from TV and radio through to different forms of internet. The current campaign has been paused as a result of funding constraints.

For implementation of changes to legislation and the issue of new regulations, the IRRS team found that Polish law has established a very comprehensive process whereby changes to the law are issued for consultation to other government departments, stakeholders and the general public – see text in Section 3.8.

With regard to the obligations and expectations on the NPP operator, the ALA makes clear the obligation to publish information about safety and radiological performance, and also to respond in writing to individuals about the status of nuclear and radiological safety. Companies developing NPPs are also obliged to have local visitor centres which provide a source of information about safety and other matters, and communities are legally empowered to establish local information committees to represent the interests of local communities and engage formally with the NPP operator.

Taken together, the IRRS team noted that the Polish government approach to stakeholder engagement on the proposed NPP programme represents a good example of effective openness and transparency which helps relevant parties and the public contribute to decisions on the nuclear power programme. It augments an existing national approach to public and stakeholder engagement with due consideration of the added issues relating to the development of a new nuclear power programme.

11.2.6 SSG-16 Element 06 Funding and financing

The funding and financing of the regulatory body is a fundamental consideration in establishing and securing the independence of that body. The IRRS team's views on the independence of PAA are set out in Section 3.1 of this report.

With regard to the mechanism for funding of PAA for the nuclear power programme, the arrangements already in place for PAA continue unchanged in principle and process. PAA is funded directly from the state budget rather than via a levy on nuclear operating companies. Although companies are charged for the costs of regulatory oversight, including for review and assessment of an NPP licence application, these costs are remitted to the state rather than PAA. With regard to building the necessary resources to effectively regulate the nuclear power sector the PAA President's bid for 39 additional staff to support the new build programme has been

accepted by government. The IRRS team observed no signs of undue constraints being imposed on PAA resource, but note that if the NPP programme proceeds, further significant increases in staff will be needed – which will require further amendment to the ALA.

With regard to the funding of the operating organization, a legal requirement is in place which, in essence, means that a licence shall only be granted if an organisation has sufficient funding to conduct its activities safely. A demonstration of financial adequacy is required through the submission, and review of documents showing that the proponent has sources of funding together with a financial plan and financial report on projected expenditure extending through the life cycle of the facility. In accordance with the ALA, long-term funding of radioactive waste disposal, spent fuel management and decommissioning associated with NPP operation will be secured through the licensee's quarterly payments based on megawatt-hours produced by the nuclear power plant to fund a decommissioning plan. The Polish government's plans for radioactive waste management are considered further in SSG-16 Element 16.

Polish funding of education and training and research facilities is, to date, relatively modest. A sum of 50m zloties has been allocated to the education and training programme for the 10 year period covered in the PNPP. This reflects the government's approach to enabling rather than directly funding the infrastructure needed to support the new NPP programme - for example, in helping Universities to develop and offer training courses rather than directly funding course design and delivery. Reliance is effectively placed on the Market to meet the demands for education and training. A further 160m zloties has been assigned to research facilities over the same period. This also appears modest, and the government may need to review this as the NPP programme develops.

11.2.7 SSG-16 Element 07 External support organizations and contractors

The approach to using external organisations to provide technical and other support is a fundamental issue in the design and staffing of a regulatory body, as discussed in Sections 3.3 and 4.3 of this report. SSG-16 Element 9 of this report considers the use of TSOs in the wider context of PAA resource strategy for the new reactor build programme.

PAA currently has a limited number of staff to deal with the activities of the nuclear power programme and recognises the need to have strong support from national TSOs as well as international organizations. This support will be especially important in the initial phases of the programme where the siting and preliminary safety analysis report assessments have to be conducted. PAA recognises the need to be an intelligent customer for work that is conducted on its behalf by TSOs and this means that it will need to put in place both the technical capability to discharge this function, and also the project management infrastructure. That infrastructure may be anticipated to grow significantly, and the regulatory body will need to consider how best to manage this.

PAA has already engaged with some local organizations, such as Warsaw University of Technology, that will provide support for independent calculations in accident analysis and severe accidents; the Gdansk University of Technology that will provide support in the fields of probabilistic safety assessment and instrumentation and control; Silesian University of Technology in the field of thermo-hydraulics and the Institute of Geophysics of Polish Academy of Sciences for siting related assessments.

Support from international experts is envisaged by PAA for the areas of competency not available in the country.

The team considers that progress has been achieved in this area. However, a systematic assessment of the technical expertise needed to support the licensing process, and the organizations that could potentially provide that expertise, has not yet been conducted. PAA may wish to consider reviewing the availability of external support across the range of technical and other disciplines needed to support the NPP programme, and considering the way in which that support can be secured for the long-term – see Suggestion in Section 3.3.

11.2.8 SSG-16 Element 08 Leadership and management for safety

With respect to the PAA, this element is addressed in Section 4 of this report. With respect to the operating organization, the ALA requires the organizational entities conducting the activities to have an integrated management system. The IRRS team met with representatives of PGE. PGE informed the team that they are aware of these provisions.

For the development of an NPP programme, the IRRS team emphasized the significance of effective leadership and management for safety – especially early in the process the organizational development and management oversight of the supply chain who may be entering the nuclear industry for the first time.

11.2.9 SSG-16 Element 09 Human resources development

The overall approach to PAA human resource development and management is considered in Section 3.3 of this report where the PAA resource strategy is referenced. The introduction of a nuclear power programme places additional and changed demands on the PAA's resources. This has been recognised by the PAA who, in 2009, conducted a self-assessment process to identify organizational, legal and functional changes in the organization. As a result of this review, a document was prepared entitled "Guidelines for programme of necessary actions to be taken in the National Atomic Energy Agency". In the Guidelines, the PAA recognises that there is a shortage of staff to support future activities related to the nuclear power programme. As noted in SSG-16 Element 6 of this report, the President of PAA has successfully made a case for additional funding to recruit 39 new staff. These include:

- 17 nuclear regulatory inspectors
- 13 employees performing analyses of safety documentation
- 9 lawyers or specialist in administrative law staff

The team was informed that the plan to recruit a mixture of young and senior professionals has not been fully successful due to lack of competitiveness of the salaries proposed by the PAA. For the Nuclear safety department 2 people were recruited in 2009, 3 in 2010, 2 in 2011 and 10 in 2012. Of those, 4 are experienced and 13 are junior staff who need to be trained before becoming fully operational. There is also a risk that new recruits may leave the organization after being trained and the PAA should consider developing a staff retention strategy. The PAA will also need to ensure that a structured training programme based on the systematic approach to training is in place to prepare its staff to work on the NPP programme.

The team considers that overall, the PAA has taken positive steps to secure increased resources to support the NPP programme. However, an important factor in determining the resource and competence needs of a regulatory body is a decision on the extent to which it will conduct work in-house as opposed to securing work by external support (Technical Support Organisations – see SSG-16 Element 7 of this report). PAA does not currently have a policy on the use of in-house vs. external support and the team considered that developing such a policy would be a prudent step (and see SSG-16 Element 7 of this report).

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES	
(1)	***BASIS: GSR Part 1 R18 states that:****"The regulatory body shall employ a sufficient number of qualified and competent staff, commensurate with the nature and the number of facilities and activities to be regulated, to perform its functions and to discharge its responsibilities."* ***GSR Part 1 para 4.19 states that: "****Technical and other expert professional advice or services may be provided in several ways by experts external to the regulatory body. The regulatory body may decide to establish a dedicated support organization, in which case clear limits shall be set for the degree of control and direction by the regulatory body over the work of the support organization."* ***SSG-16 Action 85 states that:*** *"The government should consider a strategy for attracting, training and retaining an adequate number of experts to meet the needs of all organizations involved in ensuring safety in a prospective nuclear power programme."* ***SSG-16 Action 90 states that:****"All relevant organizations should implement a strategy to attract and retain high quality trained personnel."*
(S16)	**Suggestion: The government should consider strategies and mechanisms to enable PAA to attract and retain high quality trained personnel.**

11.2.10 SSG-16 Element 10 Research for safety and regulatory purposes

At present, the PAA identified two major areas of interest for the NPP programme: accident analysis and severe accidents. Computer codes were acquired from the NRC and a programme, in cooperation with the Warsaw University of Technology, is being implemented to develop the competencies to perform independent calculations.

At international level, the PAA is participating in meetings and working groups with other regulatory authorities. Examples of that effort are participation in the Working Groups on Regulations of New Reactors, Inspection Practices and Risk Assessment under NEA as well as WENRA meetings. Although this participation cannot be formally qualified as "research", it will certainly help the PAA to understand current issues in the field of nuclear power plant safety and identify future areas of research.

At a national level, a strategic research project entitled Technologies Supporting Development of Safe Nuclear Power Engineering is being implemented, covering a number of relevant technical areas.

The team considers that the actions taken both at a national level as well as by PAA are satisfactory.

11.2.11 SSG-16 Element 11 Radiation protection

The IRRS team considered that the existing legislation and regulations in the field of radiation protection provide an appropriate framework for the regulation of the future nuclear power plant. Amendments to the legislation are being implemented as required by the European Directives.

PAA takes part in the environmental impact assessment process with regard to radiation risks. The site of the future nuclear power plant has not been selected yet and the EIA process has not been initiated.

The IRRS team did not identify issues relevant to actions for this element for phase 2 in SSG-16.

11.2.12 SSG-16 Element 12 Safety assessment

For the purpose of preparing PAA to conduct reviews and assessments of safety documentation, a separate organizational unit was established within the Nuclear Safety Department. As of today, there are 5 specialists employed in this unit who are continuing to develop their competence.

Employees participate in training conducted in Poland and abroad. The training mainly concerns the use of computational codes, received under the bilateral agreements with the NRC, for deterministic and probabilistic analyses. Apart from this, Polish experts take part in international meetings during which nuclear safety issues are presented and where they have the opportunity to discuss problems with international specialists.

As mentioned in section 11.2.10 of this report, the PAA together with the Warsaw University, are involved in a programme to develop competencies in the field of safety analysis and severe accidents. This effort will certainly help in the process of reviewing certain chapters of the preliminary safety analysis report. However these competencies constitute a small part of the overall set of competencies required for an NPP regulatory body.

It is the opinion of the IRRS team that PAA should start developing competencies in other technical areas needed in the assessments that have to be conducted by PAA as part of the licensing process. A suggestion on this topic is presented in 3.3.

11.2.13 SSG-16 Element 13 Safety of radioactive waste, spent fuel management and decommissioning

The overall approach to the management of radioactive waste, spent fuel management and decommissioning is considered in Sections 1, and 5 through 9 of this report.

11.2.14 SSG-16 Element 14 Emergency preparedness and response (regulatory aspects)

The overall approach to emergency preparedness and response is considered in Section 10 of this report.

11.2.15 SSG-16 Element 15 Operating Organization

Within the context of the IRRS review, there is an appropriate regulatory framework in place to support the near term activities expected to be taken by the operating organization. As previously noted, the IRRS review team met with representatives of PGE who informed the team that they are aware of these provisions. Further consideration of the operating organisation is not included within the scope of this review.

11.2.16 SSG-16 Element 16 Site survey, site selection and evaluation

Article 35b of the nuclear law provides several statements concerning siting. In Article 36a of the ALA it is stated that before applying for a nuclear facility construction licence, the investor can apply to the Agency's President for a preliminary assessment of the site of a future nuclear facility and the Agency's President shall issue an opinion within 3 months from the submission date. (Investor is obliged to apply for preliminary assessment under the 2011 Nuclear Investment Act.) In support to the ALA, a regulation was issued providing the detailed scope of assessment with regard to land intended for the location of a nuclear facility.

PGE, with the support of an external company, is starting the site characterization and will prepare the site documentation to be submitted to PAA. The team considers that the work performed by PAA is sufficient for the present stage of the nuclear power programme in Poland.

11.2.17 SSG-16 Element 17 Design safety

General statements on the design of nuclear facilities have been established by the ALA Act. Those requirements determine the general conditions that the design of nuclear facility has to fulfil. Article 36b of ALA Act prohibits use of solutions or technologies which have not been demonstrated to be appropriate in practice in other nuclear facilities, or by means of tests, studies and analyses.

Detailed regulations considering safety of nuclear facility design that has to be included in the bid specification were introduced by the Regulation of the Council of Ministers. This regulation provides further details and elaborates on the statements in the ALA Act. These regulations are based on current and latest requirements accepted in other countries. Some specific design requirements take into account the preliminary conclusions from Fukushima Dai-ichi power plant accident and flood threat to the Fort Calhoun power plant.

The team considers that considerable work has been done for the current stage of the nuclear power programme, both at a national level and by PAA. See Good Practice in 11.2.3.

11.2.18 SSG-16 Element 19 Transport Safety

With respect to transport safety, PAA already had established the requirements for transport as contained in the ALA and implementing Regulation of the Council of Ministers of 20 February 2007 on the terms for import into the territory of the Republic of Poland, export from the territory of the Republic of Poland and transit through this territory of nuclear materials, radioactive sources and equipment containing such sources. Further, Poland has implemented into the national legal system, transport regulations in TS-R-1 through the ADR, RID, IMDG, and ICAO technical instructions. In addition, PAA participates in international activities such as being a corresponding member of IAEA TRANSSC committee. PAA also attends meetings of the Standing Working Group on Safe Transport of Radioactive Material (SWG).

The IRRS team concluded that Poland appears to be consistent with the expectations of SSG-16.

11.2.19 SSG-16 Element 20 Interfaces with nuclear security

The IRRS review team's consideration of the Polish government's approach to the coordination of authorities with responsibilities for safety and other aspects including security are set out in Section 1.9 of this report.

APPENDIX 1 – LIST OF PARTICIPANTS

INTERNATIONAL EXPERTS			
1.	**LEWIS** Robert	U.S. Nuclear Regulatory Commission (NRC)	Robert.Lewis@nrc.gov
2.	**JANKO** Karol	Nuclear Regulatory Authority of the Slovak Republic (UJD SR)	karol.janko@ujd.gov.sk
3.	**BASTOS** Jose	Federal Authority for Nuclear Regulation	Jose.Bastos@fanr.gov.ae
4.	**BLY** Ritva	Radiation and Nuclear Safety Authority (STUK)	ritva.bly@stuk.fi
5.	**BLOMMAERT** Walter	Federal Agency for Nuclear Control (FANC)	walter.blommaert@fanc.fgov.be
6.	**DEVOS** Jacques	Autorité de sûreté Nucléaire (ASN)	Jacques.DEVOS@asn.fr
7.	**FRANZÉN** Anna	Swedish Radiation Safety Authority (SSM)	anna.franzen@ssm.se
8.	**PECNIK** Maksimilijan	Ministry of Agriculture and the Environment - Slovenian Nuclear Safety Administration	maks.pecnik@gov.si
9.	**REIERSEN** Craig	Health and Safety Executive (HSE); Office for Nuclear Regulation (ORN)	craig.reiersen@hse.gsi.gov.uk
10,	**SHIN** DaeSoo	Koera Instituite of Nuclear Safety (KINS)	sds@kins.re.kr k251sds@kins.re.kr
11.	**STAROSTOVA** Vera	State Office for Nuclear Safety (SÚJB); Emergency	vera.starostova@sujb.cz
12.	**BQOOR** Mohammad	Jordan Nuclear Regulatory Commission	Bqoor@jnrc.gov.jp

IAEA STAFF MEMBERS			
1.	**REBER** Eric	Division of Radiation, Transport and Waste Safety	E.Reber@iaea.org
2.	**KOENICK** Stephen	Division of Nuclear Installation Safety	S. Koenick@iaea.org
3.	**KUTKOV** Vladimir	Incident and Emergency Centre	V.Kutkov@iaea.org
4.	**BEZDEGUEMELI** Ugur	Division of Nuclear Installation Safety	U.Bezdeguemeli@iaea.org
5.	**SWOBODA** Zumi	Division of Radiation, Transport and waste Safety	Z.Swoboda@iaea.org
LIAISON OFFICER			
	KOC Michal	National Atomic Energy Agency (PAA)	michal.koc@paa.gov.pl

APPENDIX II – MISSION PROGRAMME

Schedule of the IRRS Mission to Poland	
14 April, Sunday	
14:15	Meet in the lobby of the Hotel Mercure Warszawa Grand and then walk to PAA Headquarters

14:30–18:00	Initial IRRS Review Team Meeting (PAA Conference Room 117)
	• Opening remarks, DDG-NS (Denis Flory)
	• Introduction of IRRS Review Team and PAA Liaison
	• Opening remarks, IRRS Team Leader (Robert Lewis)
	  o Main Objectives
	  o Report writing
	• IRRS Process and Schedule, IAEA Coordinator (Eric Reber) and IAEA Deputy Coordinator (Stephen Koenick)
	• Overview of Advance Reference Material, PAA Liaison (Michal Koc)
	• Administrative Arrangements, IAEA Coordinator and PAA Liaison
	• Brief presentations by Team Members
	Reviewers to briefly present (10 min each) their prepared statements on their initial observations concerning the Advance Reference Material, areas needing clarification, and potential recommendations, suggestions and good practices. Where more than one reviewer will be working together they should agree on who will make the presentation. This is also an opportunity to raise any concerns with the PAA Liaison.
	The order of the presentations is that of the IRRS Modules, i.e., Modules 1 – 10 and then the Tailored Module for countries embarking on nuclear power.

19:00–21:00	Informal Team Dinner

<table>
<tr><th colspan="7">15 April, Monday</th></tr>
<tr><td>10:00–
12:00</td><td colspan="6">Entrance Meeting, Auditorium, Hotel Mercure Warszawa Grand
• Opening of the meeting, Meeting Chairman, Robert Czarnecki, DG, PAA
• Opening remarks by Denis Flory, DDG-NS, IAEA
• Opening remarks by Ms. Hanna Trojanowska, Vice-Minister of Economy, Government Commissioner for Polish Nuclear Power
• Opening remarks by Ms. Krzysztof Kowalik, representative of Minister of Environment
• Opening remarks, Team Leader, Robert Lewis, self-introduction of the review team
• Overview of PAA activities, Janusz Włodarski, President, PAA
• Overview of PAA activities connected with self-assessment, introduction of PAA counterparts, Mission schedule and logistics, PAA Liaison, Michal Koc
PAA: all involved

[MoH, MoInt, MoEC, MoENV, GCS, NCBJ invited to the entrance and exit meeting]</td></tr>
<tr><td>12:00–
13:00</td><td colspan="6">Team members, lunch in PAA Cafeteria
President, PAA; DDG-NS, IAEA; and Team Leader, local restaurant</td></tr>
<tr><td rowspan="2">13:00–
17:30</td><td rowspan="2">13:00-14:00
Planning meeting for joined interviews of Modules 1-3 and Tailored Module SSG16 modules 1 and 2

14:00-17:30
Modules 1 - 2
Briefing by PAA counterpart (20 minutes);
Interviews, review of written material.
Observer

Room: 117</td><td rowspan="2">Module 4
Briefing by PAA counterpart (20 minutes);
Interviews, review of written material.

Also covers Tailored Module element 08

Room 119</td><td colspan="3">Modules 5 – 9
Joined briefing by PAA Vicepresident for Medical and non-Medical Sources, Research Reactor, and Radioactive Waste

Conference Room 117
40-60 minutes</td><td rowspan="2">Module 10
Emergency Response Radiation Emergency Centre “CEZAR”;
Briefing by PAA counterpart (20 minutes);
Interviews, review of written material;
Also covers Tailored Module element 14

PAA:
Room: 144</td><td rowspan="2">Tailored Module
Interviews, review of written material.
Briefing by PAA counterpart (20 minutes);
Modules 1 – 2 discussion for SSG16 modules 1 and 2
Modules 5 – 9 overview, then joins Modules 5-9 Sources Group for review of SSG16 Modules 11 and 19
PAA counterparts join Modules 1-3</td></tr>
<tr><td>Modules 5 – 9
Medical and Non-Medical Sources
Interviews, review of written material.
SARIS Module 3 questions 9-20
SSG16 Modules 11 +19
Room: 345</td><td>Modules 5 -9
Radioactive Waste
Interviews, review of written material
SARIS Module 3 questions 9-20

Room: 122</td><td>Modules 5 – 9
Research Reactor
Interviews, review of written material.
SARIS Module 3 questions 9-20

Room: 715</td></tr>
</table>

<table>
<tr><th colspan="8">15 April, Monday</th></tr>
<tr><td>17:30–18:30</td><td colspan="7">Daily Meeting, Review Team, Observer, PAA Liaison (PAA Conference Room 117)</td></tr>
<tr><td>18:30–20:00</td><td colspan="7">Dinner, hosted by PAA</td></tr>
<tr><td>20:00–</td><td colspan="7">Report writing</td></tr>
<tr><th colspan="8">16 April Tuesday</th></tr>
<tr><td></td><td>Modules 1 – 3</td><td>Module 4</td><td>Modules 5 – 9 Medical and Non-Medical Sources</td><td>Modules 5 -9 Radioactive Waste</td><td>Modules 5 – 9 Research Reactor</td><td>Module 10 Emergency Preparedness</td><td>Tailored Module</td></tr>
<tr><td>08:00–09:00</td><td></td><td></td><td>Travel from hotel to medical site</td><td colspan="3">Travel from hotel to Świerk Site</td><td></td></tr>
<tr><td>08:30–09:00</td><td colspan="7">Morning Meeting, IAEA: TL, DTL, TC, and DTC
Room 117
PAA: J. Włodarski, R. Czarnecki, M. Zagrajek, P. Korzecki, E. Raban, M. Koc</td></tr>
<tr><td rowspan="3">09:00–12:00</td><td rowspan="3">Interviews, review of written material and report writing Module 1-2 Additionally SSG16 Modules 3,5,6,20

Room: 117 Meeting until 13:00</td><td rowspan="3">Interviews, review of written material and report writing

Room: 119

Meeeting until 13:00</td><td rowspan="3">Medical Site Visit Oncology Center – Observation of inspection and management meeting Morning and afternoon site visits:</td><td colspan="3">Świerk Site Visit</td><td rowspan="3">Modules 1-3 for review of SSG16 Modules 3,5,6,20</td></tr>
<tr><td rowspan="2">Radioactive Waste Organization; review of waste facility and procedures (not inspection),</td><td>MARIA Research Reactor; observation of inspection, plant management meeting, until 14:30</td><td rowspan="2">Review of EP facility plan (not inspection),</td></tr>
<tr><td>15:00: Lunch and then return to PAA Headquarters</td></tr>
</table>

16 April Tuesday						
12:00–13:00	Lunch, PAA Cafeteria 13:00-14:00	Lunch near medical or non-medical site	12:00-13:00 RW and EP groups returns to PAA 13:14:00 Lunch PAA Cafeteria		12:00-13:00 RW and EP groups returns to PAA for Lunch 13:00 – 14:00	Lunch PAA Cafeteria
14:00–17:30	14:00-17:30 Joined meeting - Module 3 (SARIS Module 3 RB Functions: questions 1-5) Room: 119 Interpretation for UK: A.Berlińska after return from Świerk Site	Industrial Radiography Site Visit ENERGOMONTAŻ - PÓŁNOC Technika Spawalnicza i Laboratorium Sp. z o.o., Warszawa ul. Chełmżyńska 194	14:00 -17:30 Interviews, review of written material and report writing Room 122		14:00 -17:30 Interviews, review of written material and report writing Room 144	14:00-17:00 Site visit to Project Company
		Observation of inspection and management meeting; May include Module 10 review				Input for site visits to be provided by non-Tailored module reviewers Interviews on SSG16 Modules: 4, 7,9,10,12,13, 16,17 Room: 727(728)
17:30–18:30	Daily Meeting, Review Team, Observer, PAA Liaison (PAA Conference Room 117)					
18:30–20.30	Dinner (no host)					
20:30–	Report writing					

17 April, Wednesday							
	Modules 1 - 3	Module 4	Modules 5 – 9 Medical and Non-Medical Sources	Modules 5 -9 Radioactive Waste	Modules 5 – 9 Research Reactor	Module 10	Tailored Module
08:30–09:00	*Morning Meeting, IAEA: TL, DTL, TC, and DTC* *PAA: J. Włodarski, M. Jurkowski, R. Czarnecki, M. Zagrajek, P. Korzecki, K .Dąbrowski, A. Głowacki, E. Raban, M. Koc*						
09:00–12:00	Module 3 discussion, then interviews, review of written material and report writing For Module 3 (SARIS Module 3 questions 6-8 and 21-22: Room: 117	Interviews, review of written material and report writing Room: 119	Interviews, review of written material and report writing Room: 345	Interviews, review of written material and report writing Room: 122	Interviews, review of written material and report writing Room: 715	Interviews with MoH, MoInt, GCS (joined meeting) at PAA Headquarters Room: 144	Interviews, review of written material and report writing
12:00–13:00	Lunch, PAA Cafeteria						Lunch near site
13:00–16:00	Interviews with representatives from Council for Nuclear Safety and Radiological Protection Affairs Room: 117	Morning activities continue Room: 119	Morning activities continue Room: 345	Morning activities continue Room: 122	Morning activities continue	Module 10 Interviews, review of written material; Also covers Tailored Module element 14 Room: 144	Site visit to Ministry of Economy; return to PAA following site visit Interviews, review of written material and report writing: Room:727(728)
16:00 – 17:00	Writing first draft of preliminary findings (Rs, Ss, and GPs) and delivery to TL, DTL, TC and DTC						
17:30 – 18:30	Daily Meeting, Review Team, Observer, PAA Liaison, presentation of preliminary findings, discussion of findings (PAA Conference Room 117)						
18:30 – 20:00	Dinner (no host)						
20:00–	Compilation of first draft of preliminary findings into report by Admin Assistant, TC, DTC Report writing by team members						

18 April, Thursday							
	Modules 1 - 3	Module 4	Modules 5 – 9 Medical and Non-Medical Sources	Modules 5 -9 Radioactive Waste	Modules 5 – 9 Research Reactor	Module 10 Emergency Preparedness	Tailored Module
08:30–09:00	*Morning Meeting, IAEA: TL, DTL, TC, and DTC* *PAA: J. Włodarski, M. Jurkowski, R. Czarnecki, M. Zagrajek, P. Korzecki, K .Dąbrowski, A. Głowacki, E. Raban, M. Koc* *Discussion of preliminary findings*						
09:00–11:00	Policy issues discussion, PAA Conference Room 1. Independence of the regulatory body 2. Capacity building for countries embarking on nuclear power; tentatively Room: 117	No meeting (join policy issues meeting)	Interviews, review of written material and report writing	Interviews, review of written material and report writing Room: 122	Interviews, review of written material and report writing Room: 715	Radiation Emergency Centre "CEZAR" Interviews, review of written material and report writing Room: 114	Interviews, review of written material and report writing: Room: 727 (728)
11:00–12:00	Interviews, review of written material and report writing; DTC (if available) writes introductory parts of report						
12:00–13:00	Lunch, PAA Cafeteria						
13:00–17:30	Team members write the report, DTC writes introductory parts of report						
17:30–18:30	Dinner (no host)						
20:00–	Report writing						

19 April, Friday	
08:30– 09:00	*Morning Meeting, IAEA: TL, DTL, TC, and DTC, Observer* *PAA: J. Włodarski, M. Jurkowski, R. Czarnecki, M. Zagrajek, P. Korzecki, K .Dąbrowski, A. Głowacki, E. Raban, M. Koc*
09:00– 12:00	Team members write the report, Submittal of draft texts to TL TL and DTL review introductory parts of report
12:00– 13:00	Lunch, PAA Cafeteria
13:00– 17:30	TL, DTL, TC, DTC, Admin Assistant edit report Cross reading by Review Team Release of preliminary draft report to PAA 14:30 Site visit to the Ministry of Environment
17:30– 18:30	Daily Meeting, Review Team, Observer, PAA Liaison (PAA Conference Room 117)
18:30– 20:00	Dinner (no host)
20:00–	Review Team and Observer read the Draft
20 April, Saturday	
09:00– 12:00	Meeting to discuss draft report and make improvements, Review Team, Observer, PAA Conference Room 117 Cross reading TL, DTL, TC, DTC read the entire Draft
12:00– 13:00	Lunch (no host, local restaurant)
13:00– 18:00	Finalization of the Draft Report, PAA Conference Room 117
18:00 –20:00	Dinner (no host)
20:00–	TL, DTL, TC, DTC, Admin. Assistant edit the report, PAA Conference Room 117

21 April, Sunday	
12:00-16:00	PAA social/cultural programme: *12:00:* Leave hotel; *14:00:* Lunch; *~16:00:* return to hotel Reading, cross-reading the report PAA: *J. Włodarski, M. Jurkowski, R. Czarnecki, M. Zagrajek, P. Korzecki, K .Dąbrowski, A. Głowacki, E. Raban, M. Koc, A.Furtek, B.Lewandowska*
22 April, Monday	
For the whole week meeting rooms for groups are the same as in the first week	
08:30–09:00	*Morning Meeting, IAEA: TL, DTL, TC, and DTC* *PAA: J. Włodarski, M. Jurkowski, R. Czarnecki, M. Zagrajek, P. Korzecki, K .Dąbrowski, A. Głowacki, E. Raban, M. Koc*
09:00–12:00	Individual discussion with PAA counterparts on the findings Cross reading TL, DTL, TC, DTC read the entire Draft PAA: all involved, as needed
12:00–13:00	Lunch, PAA Cafeteria
13:00–17:30	Meeting for discussion, cross reading and finalization of the report, Review Team, Observer TC, DTC prepare executive summary; TL prepares exit meeting presentation
17:30–18:30	Daily Meeting, Review Team, Observer, PAA Liaison
18:30–20:00	Dinner (no host)
20:00–	TL, DTL, TC, DTC, Admin. Assistant finalize changes

23 April, Tuesday	
09:00– 12:00	Read through and finalize the draft report, Review Team and Observer Submission of the Draft to PAA
12:00- 13.00	Lunch, PAA Cafeteria
13:00- 16:00	PAA counterparts read draft report TL finalizes executive summary and exit meeting presentation TC drafts Press Release
16:00 – 18:00	Discussion of executive summary, Review Team, Observer
18:30– 20:00	Dinner (no host)
24 April, Wednesday	
09:00 10:00	*Morning Meeting, IAEA: TL, DTL, TC, and DTC* *PAA: J. Włodarski, M. Jurkowski, R. Czarnecki, M. Zagrajek, P. Korzecki, K .Dąbrowski, A. Głowacki, E. Raban, M. Koc*
10:00- 12:00	Discussion of report findings (as needed), Review Team, Observer and PAA Counterparts PAA: all involved, as needed
12:00– 13:00	Lunch, PAA Cafeteria
13:00– 17:00	PAA submits written comments, 13:00 Finalize the report, Review Team, Observer
16:30– 17:00	Introduction of DIR-NSRW to President and DG of PAA (PAA President Office)
17:00– 18:00	Briefing the DIR-NSRW, TL, DTL, TC, DTC (PAA Conference Room 117) Finalization of the Press Release
18:00- 20:00	Farewell Dinner hosted by PAA

25 April, Thursday	
09:00– 10:00	Submission of the Final Draft to PAA
10:00– 12:00	Exit Meeting, Auditorium, Hotel Mercure Warszawa Grand • Opening of the meeting, Janusz Włodarski, President, PAA • Presentation on the findings of the mission, Robert Lewis, Team Leader • Remarks by Pil-Soo Hahn, DIR-NSRW, IAEA • Remarks by the Ministries and PAA PAA: all involved
12:00–	Departure of the Review Team

APPENDIX III – SITE VISITS

Facilities visited:

1. Oncology Centre, Warsaw
2. MARIA Research Reactor, Swierk
3. Radioactive Waste Management Plant ~~in~~ Swierk
4. National Centre for Nuclear Research, Swierk
5. ENERGOMONTAŻ - PÓŁNOC Technika Spawalnicza i Laboratorium Sp. z o.o., Warszawa ul. Chełmżyńska 194

APPENDIX IV – LIST OF COUTNERPARTS

	IRRS Experts	PAA Lead Counterpart	PAA Support Staff
1.	**RESPONSIBILITIES AND FUNCTIOS OF THE GOVERNMENT**		
	J. Devos C. Reiersen R. Lewis K. Janko Mohamed Bqoor	P. Korzecki M. Zagrajek	K. Sieczak J. Łatka
2.	**GLOBAL NUCLEAR SAFETY REGIME**		
	J. Devos M. Bqoor C. Reiersen R. Lewis K. Janko E. Reber S. Koenick U. Bezdeguemeli	P. Korzecki M. Zagrajek	S. Janikowski J. Łatka K.Sieczak
3.	**RESPONSIBILITIES AND FUNCTIONS OF THE REGULATORY BODY**		
	J. Devos R. Lewis K. Janko Mohammed Bqoor	P. Korzecki	K. Sieczak J. Łatka E. Staroń T.Dziubiak M.Skórka M. Pietruszewski A. Pawlak P.Domitr W.Szmek
4.	**MANAGEMENT SYSTEM OF THE REGULATORY BODY**		
	A.Franzén	J. Wlodarski R. Czarnecki	

	IRRS experts	PAA Lead Counterpart	PAA Support Staff
5.	**AUTHORIZATION**		
	R. Bly M. Pecnik D. Shin J. Bastos W. Blommaert	M. Jurkowski E. Raban A.Glowacki	PAA Support Staff
6.	**REVIEW AND ASSESSMENT**		
	R. Bly M. Pecnik D. Shin J. Bastos W. Blommaert	M. Jurkowski E. Raban A.Glowacki	PAA Support Staff
7.	**INSPECTION**		
	R. Bly M. Pecnik D. Shin J. Bastos W. Blommaert	M. Jurkowski E. Raban A.Glowacki	PAA Support Staff

	IRRS Experts	PAA Lead Counterpart	PAA Support Staff
8.	**ENFORCEMENT**		
	R. Bly M. Pecnik D. Shin J. Bastos W. Blommaert	M. Jurkowski E. Raban A.Glowacki	K.Doner T.Dziubiak M.Dąbrowski U. Kolodziej M. Kubalski M. Kruszewski M. Skórka R. Truszkowski B. Więcław J. Zandberg B. Zielińska W.Szmek
9.	**REGULATIONS AND GUIDES**		
	R. Bly M. Pecnik D. Shin J. Bastos W. Blommaert	M. Jurkowski E. Raban A.Glowacki	K.Doner T.Dziubiak M.Dąbrowski U. Kolodziej M. Kubalski M. Kruszewski M. Skórka R. Truszkowski B. Więcław J. Zandberg B. Zielińska W.Szmek
10.	**EMERGENCY PREPAREDESS AND RESPONSE**		
	V. Starostova V.Kutkov	K. Dąbrowski	M. Szalek A.Rybarczyk R.Dąbrowski
11.	**TAILORED MODULES FOR COUNTRIES EMBARKING ON NUCLEAR POWER**		
	C. Reiersen J. Bastos Ugur Bezdeguemeli	M. Zagrajek	M. Pietruszewski P. Domitr E. Staroń A.Pawlak S. Janikowski

APPENDIX V – RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES

Area		R:Recommendations S: Suggestions G: Good Practices	Recommendations, Suggestions or Good Practices
1.	**RESPONSIBILITIES AND FUNCTIONS OF THE GOVERNMENT**	R1	The government should adopt a single, clear document expressing the policy and strategy for safety.
		R2	The Government should develop procedures and requirements to ensure that removal of persons with executive safety responsibility within PAA is not subject to unwarranted political influence.
		S1	PAA should establish or revisit agreements and rules of functioning with other government authorities involved in the regulation of facilities and activities in order to coordinate regulatory activities. One specific example is that the President of PAA and the Chief Sanitary Inspector should revisit the Agreement of Cooperation to enhance coordination on the regulation of the medical use of ionization radiation.
		GP1	The PAA proactively developed a framework for cooperation with the Office of Technical Inspection for periodic safety assessment.
		R3	The government should put in place measures that prohibit the involvement of the operator or the PAA in the management of the decommissioning fund.
		S2	In view of the planned 2022 closure of the National Radioactive Waste Depository in Różan, the government is encouraged to accelerate the production of the National Plan for RW and SNF management, and of the siting process for the new surface repository for low and intermediate level waste.
		R4	The Government should ensure adequate resources for the timely removal of the non-segregated historical waste of Facility 2 and Facility 3 of the National

Area		R:Recommendations S: Suggestions G: Good Practices	Recommendations, Suggestions or Good Practices
			Radioactive Waste Depository in Różan.
2.	**GLOBAL NUCLEAR SAFETY REGIME**	S3	The regulatory body PAA should establish an internal process for using the feedback from operating experience, incidents and accidents in Poland as well as in other countries.
3.	**RESPONSIBILITIES AND FUNCTIONS OF THE REGULATORY BODY**	R5	PAA should further develop a staffing plan for the current and future scope of regulatory functions that aligns the number of staff necessary and the essential knowledge, skills and abilities for them to implement the organizational goals and priorities. Such a staffing plan should leverage internal resources and external support.
		S4	PAA should consider reviewing the availability of external support across the range of technical and other disciplines needed to support the delivery of regulatory functions relating to the NPP programme, especially the early steps of the licensing process (review of site documentation; organizational capability and preliminary safety analysis report).
		GP2	Senior management of the PAA has long experience and practice, in regulatory issues, and personally mentors and develops new inspectors.
		S5	The regulatory body PAA should prepare a strategy for increasing transparency with the public about risks and incidents in the different facilities and activities subject to its regulations.
		GP3	Broad public consultations concerning the development of regulations and laws (broader than is required by regulations) have been conducted with the institutions engaged in Polish Nuclear Power Programme and the public.
4.	**MANAGEMENT SYSTEM OF THE REGULATORY**	R6	PAA should reflect the safety goals throughout its management system documentation and identify the processes used to achieve its mission, vision, and goals, including;

Area		R:Recommendations S: Suggestions G: Good Practices	Recommendations, Suggestions or Good Practices
	BODY		1) a process for internal communication; 2) an explicit process for organizational change; and 3) an explicit method for performing management system reviews.
		R7	PAA senior management should promote an awareness of internal safety culture and ensure that it is appropriately reflected within its management system.
		R8	The PAA should appoint an individual with responsibility and authority for the coordination of the development and implementation of the management system.
5.	**AUTHORIZATION**	S6	The PAA should use the opportunity presented by the new NPP initiatives to develop a plan for issuing internal guidance documents for various types of repository activities with respect to siting, design construction, operation, closure and institutional control after closure.
6.	**REVIEW AND ASSESSMENT**	R9	As part of the upgrading of MARIA research reactor to comply with the ALA by 2015, PAA should conduct a full safety evaluation of the application.
		S7	The PAA should develop procedures covering the review and assessment of new facilities, design modification and SAR amendments for research reactors.
		R10	The PAA should establish internal management controls to ensure that official records related to licensing activity for research reactors are retained.
7.	**INSPECTION**	R11	PAA should perform periodic inspections at the EWA site to confirm that the authorized party had been in compliance with regulatory requirements, and the decommissioning activities had been performed safely.

Area		R:Recommendations S: Suggestions G: Good Practices	Recommendations, Suggestions or Good Practices
		R12	The regulatory body PAA should develop procedures and guidance for medical facilities in addition to the current use of checklists. Such procedures and guidance should address inspections of medical facilities and the performance of survey measurements in complex circumstances.
9.	REGULATION AND GUIDES	R13	Government should use the opportunity presented by the new NPP initiative to bring their regulations in line with IAEA standards on RW and SNF management, in order to enhance safety and transparency, and to develop a methodology on deriving waste acceptance criteria for disposal.
		S8	In its PNPP activities, the Government should consider that any delay in deciding on a firm waste management strategy may have consequences not only for the development of the waste package and its content, but also for establishing the necessary funds, since it will not be clear on the basis of what scenario the provisions will have to be calculated.
10.	EMERGENCY PREPAREDNESS AND RESPONSE	R14	To implement a graded approach to establishing and maintaining adequate arrangements for preparedness and response the Government should establish regulations on the categorization of threats in accordance with GS-R-2 and liaise with relevant organizations, to conduct the assessment of hazards at the national level.
		S9	PAA should consider how to enhance and formalize the involvement of CEZAR staff in the licencing and inspection processes.
		S10	The Government should consider enhancing the bilateral agreements with the Russian Federation and Belarus to reflect the potential new NPPs situated near the Polish border.
		R15	The Government should establish regulations on emergency planning zones around facilities in threat categories I and II in accordance with GS-R-2.

Area		R:Recommendations S: Suggestions G: Good Practices	Recommendations, Suggestions or Good Practices
		S11	To ensure a high degree of availability and reliability of all equipment, communication systems and facilities necessary to perform off-site response, PAA should establish its own quality assurance programme which should also include requirements for the test and calibration of the early warning system.
11.	**TAILORED MODULE FOR COUNTRIES EMBARKING ON NULEAR POWER**	S12	PAA should consider extending bilateral exchange agreements to share experiences with other countries embarking on, or expanding, its NPP programme.
		GP4	Poland has introduced changes to the ALA and regulations, including those related to decommissioning, at an early stage in the NPP program.
		S13	PAA should consider clarifying the steps necessary in the licensing process to elaborate on the existing provisions of the ALA, and communicate them internally and externally.
		S14	PAA should consider defining a strategy for production or endorsement of internal guidance which specifies the principles, requirements and associated criteria for safety used to inform regulatory judgements, decisions and actions taken during the review and assessment of material submitted as part of licence applications.
		S15	PAA should consider strengthening its pre-licensing interactions with prospective NPP applicants to support a shared understanding of regulatory expectations.
		S16	The government should consider strategies and mechanisms to enable PAA to attract and retain high quality trained personnel.

APPENDIX VI – PAA REFRENCE MATERIAL USED FOR THE REVIEW

1.IRRS Questions and Answers

Module 1: *Responsibilities and Functions of the Government*
Module 2: *Global Nuclear Safety Regime*
Module 3: *Responsibilities and Functions of the Regulatory Body*
Module 4: *Management Systems of the Regulatory Body*
Module 5: *Authorization*
Module 6: *Review and Assessment*
Module 7: *Inspection*
Module 8: *Enforcement*
Module 9: *Regulations and Guides*
Module 10: *Emergency Preparedness and Response*

2. Relevant Documentation

ATOMIC LAW WITH REGULATIONS	
Atomic Law	ACT OF PARLIAMENT of 29 November 2000 Atomic Law with amendments
01.Regulation on cases when activities involving exposure to ionizing radiation do not require license or notification and cases when activities may be performed on the basis of notification	REGULATION OF THE COUNCIL OF MINISTERS of 6 August 2002 on the cases when the exposure to ionizing radiation are exempted from mandatory licensing or notification, and on the cases when such activities can be conducted on the basis of a notification
01.1. Amendment	REGULATION OF THE COUNCIL OF MINISTERS of 27 April 2004 amending the regulation on the cases when the exposure to ionizing radiation are exempted from mandatory licensing or notification, and on the cases when such activities can be conducted on the basis of a notification
02.Regulation on documents required when submitting application to issue license	REGULATION OF THE COUNCIL OF MINISTERS of 3 December 2002 on the documents required with the application for the licence for activities involving the exposure to ionizing radiation or with the notification of such activities
02_1. Amedment1 (2004)	Amendment of 27 April 2004
02_2. Amedment2 (2006)	Amendment of 11 June 2006
03.Regulation on radioactive waste and spent nuclear fuel	REGULATION OF THE COUNCIL OF MINISTERS of 3 December 2002 on radioactive waste and spent nuclear fuel
04.Regulation on the stations for early detection of radioactive contamination and on the units that conduct measurements of radioactive contamination	REGULATION OF THE COUNCIL OF MINISTERS of 17 December 2002 on the stations for early detection of radioactive contamination and on the units that conduct measurements of radioactive contamination
05.Regulation on requirements for dosimetric equipment	REGULATION OF THE COUNCIL OF MINISTERS of 23 December 2002 on the requirements for dosimetric equipment
06.Regulation on intervention levels for various intervention measures	REGULATION OF THE COUNCIL OF MINISTERS of 27 April 2004 on intervention levels for various

	intervention measures and criteria for cancelling intervention measures
07.Regulation on entities competent to inspect maximum permitted levels of radioactive contamination of foodstuffs and feeding stuffs following a radiation event	REGULATION OF THE COUNCIL OF MINISTERS of 27 April 2004 on the determination of entities competent to inspect maximum permitted levels of radioactive contamination of foodstuffs and feeding stuffs following a radiation event
08.Regulation on the protection against ionising radiation of outside workers exposed during their activities in controlled areas	REGULATION OF THE COUNCIL OF MINISTERS of 27 April 2004 on the protection against ionising radiation of outside workers exposed during their activities in controlled areas
09.Regulation on prior information to the general public in the event of a radiation emergency	REGULATION OF THE COUNCIL OF MINISTERS of 27 April 2004 on prior information to the general public in the event of a radiation emergency
10.Regulation on ionizing radiation dose limits	REGULATION OF THE COUNCIL OF MINISTERS of 18 January 2005 on ionizing radiation dose limits
11.Regulation on the emergency plans for radiation emergency	REGULATION OF THE COUNCIL OF MINISTERS of 20 February 2007 on the emergency plans for radiation emergency
12.Regulation on detailed safety requirements for work involving ionising radiation sources	REGULATION OF THE COUNCIL OF MINISTERS of 12 July 2006 on detailed safety requirements for work involving ionising radiation sources
13.Regulation on the content of natural radioactive isotopes in raw materials, materials used in buildings, industrial waste	REGULATION OF THE COUNCIL OF MINISTERS of 2 January 2007 on the requirements concerning the content of natural radioactive isotopes of potassium K-40, radium Ra-226 and thorium Th-228 in raw materials and materials used in buildings designed to accommodate people and livestock, as well as in industrial waste used in construction industry, and the procedures for controlling the content of these isotopes
14.Regulation on the requirements for controlled and supervised areas	REGULATION OF THE COUNCIL OF MINISTERS of 20 February 2007 on the requirements for controlled and supervised areas
15.Regulation on import,export and transit of nuclear materials, radioactive sources	REGULATION OF THE COUNCIL OF MINISTERS of 20 February 2007 on the terms for import into the territory of the Republic of Poland, export from the territory of the Republic of Poland and transit through this territory of nuclear materials, radioactive sources and equipment containing such sources
16.Regulation on the requirements for the individual dose registration	REGULATION OF THE COUNCIL OF MINISTERS of 23 March 2007 on the requirements for the individual dose registration
17.Regulation on the allocated and special purpose subsidy, fees and finance management in Radioactive Waste Management Plant	REGULATION OF THE COUNCIL OF MINISTERS of 4 October 2007 on the allocated and special purpose subsidy, fees and finance management in the state-owned public utility 'Radioactive Waste Management Plant'
18.Regulation on granting license and permit to import, export and transit radioactive waste and spent nuclear fuel	REGULATION BY THE COUNCIL OF MINISTERS of 21 October 2008 on granting license and permit to import into the territory of the Republic of Poland, export from the territory of the Republic of Poland and transit through this territory radioactive waste and spent nuclear fuel

19.Regulation on physical protection of nuclear material and nuclear facilities	REGULATION BY THE COUNCIL OF MINISTERS of 4 November 2008 on physical protection of nuclear material and nuclear facilities
20.Regulation on adaptation internship and competence test in the field of nuclear safety and radiological protection	REGULATION BY MINISTER OF THE ENVIRONMENT of 21 January 2009 on adaptation internship and competence test in the course of proceedings concerning the recognition of professional qualifications in the field of nuclear safety and radiological protection, acquired in the European Union's member states.
21.Regulation on the list of border crossings across which nuclear material, etc can be imported into and exported from the territory of the Republic of Poland	REGULATION BY THE MINISTER OF INTERIOR AND ADMINISTRATION of 13 April 2011 on the list of border crossings across which nuclear material, radioactive sources, installations containing such sources, radioactive waste and spent nuclear fuel can be imported into and exported from the territory of the Republic of Poland
22.Regulation on guaranteed minimum amount of the compulsory civil liability insurance of the nuclear facility operator	REGULATION BY THE MINISTER OF FINANCE of 14 September 2011 on guaranteed minimum amount of the compulsory civil liability insurance of the nuclear facility's operator
23.Regulation on psychiatric and psychological tests of employees performing activities important for nuclear safety and radiological protection	REGULATION BY THE MINISTER OF HEALTH of 29 September 2011 on psychiatric and psychological tests of employees performing activities important for nuclear safety and radiological protection at the organizational unit conducting activities related to exposure which consist in commissioning, operation or decommissioning or a nuclear power plant
24.The Statue of the National Atomic Energy Agency	MINISTER OF THE ENVIRONMENT'S ORDER No 69 of 3 November 2011 on granting the Statue of the National Atomic Energy Agency
25.Regulation on the standard form of identity document of nuclear regulatory inspector	REGULATION BY MINISTER OF THE ENVIRONMENT of 9 November 2011 on the standard form of identity document of nuclear regulatory inspector
26.Regulation on the Council for Nuclear Safety and Radiological Protection	REGULATION BY MINISTER OF THE ENVIRONMENT of 18 November 2011 on the Council for Nuclear Safety and Radiological Protection
27.Regulation on periodical safety assessment of a nuclear facility	REGULATION BY THE MINISTER OF FINANCE of 27 December 2011 on periodical safety assessment of a nuclear facility
28.Regulation on detailed scope of assessment with regard to land intended for the location of a nuclear facility, requirements concerning location report for a nuclear facility	REGULATION BY THE COUNCIL OF MINISTERS of 10 August 2012 on detailed scope of assessment with regard to land intended for the location of a nuclear facility, cases excluding land to be considered eligible for the location of a nuclear facility and on requirements concerning location report for a nuclear facility
29.Regulation on activities important for nuclear safety and radiological protection in an organizational unit - NPP	REGULATION BY THE COUNCIL OF MINISTERS of 10 August 2012 on activities important for nuclear safety and radiological protection in an organizational unit conducting activity which consists in commissioning, operations or decommissioning of a nuclear power plant
30.Regulation on positions important for nuclear safety and radiological protection and	REGULATION BY THE COUNCIL OF MINISTERS of 10 August 2012 on positions important for nuclear safety

radiological protection inspectors	and radiological protection and radiological protection inspectors
31.Regulation on nuclear regulatory inspectors	REGULATION OF THE COUNCIL OF MINISTERS of 24 August 2012 on nuclear regulatory inspectors
32.Regulation on nuclear safety and radiological protection requirements which must be fulfilled by a nuclear facility design	REGULATION OF THE COUNCIL OF MINISTERS of 31 August 2012 on nuclear safety and radiological protection requirements which must be fulfilled by a nuclear facility design
33.Regulation on the scope and method for the performance of safety analyses and the scope of the preliminary safety report for a nuclear facility	REGULATION OF THE COUNCIL OF MINISTERS of 31 August 2012 on the scope and method for the performance of safety analyses prior to the submission of an application requesting the issue of a license for the construction of a nuclear facility and the scope of the preliminary safety report for a nuclear facility
34. Order on granting the Statute of the National Atomic Energy Agency	MINISTER OF THE ENVIRONMENT'S ORDER No 69 of 3 November 2011 on granting the Statue of the National Atomic Energy Agency
35. Regulation on requirements for the commissioning and operation of nuclear facilities	REGULATION OF THE COUNCIL OF MINISTERS of 11 February 2013 on requirements for the commissioning and operation of nuclear facilities
36. Regulation on requirements for the decommissioning of nuclear facilities	REGULATION OF THE COUNCIL OF MINISTERS of 11 February 2013 on nuclear safety and radiological protection requirements for the stage of decommissioning of nuclear facilities and the content of a report on decommissioning of a nuclear facility
OTHER LEGAL ACTS, REGULATIONS AND ORDERS	
40.Act on Technical Inspection	ACT OF PARLIAMENT of 21 December 2000 on the Technical Inspection
41.Building Law	ACT OF PARLIAMENT of 7 July 1994 Building Law
42.Labour Code	THE LABOUR CODE of 26 June 1974.
43.The Criminal Code	The Criminal Code of 6 June 1997
44.The Code of Administrative Proceedings	The Code of Administrative Proceedings of 9 October 2000
45.Environment Protection Law	ACT of 27 April 2001 on Environment Protection Law
46.Public Procurement Law	Act of 29 January 2004 Public Procurement Law
47.Act on Crisis Management	ACT of 26 April 2007 on Crisis Management
48.Regulation on National Critical Infrastructure Protection Programme	Regulation of the Council of Ministers of 30 April 2010 on National Critical Infrastructure Protection Programme
49.Regulation on Critical Infrastructure Protection Plans	Regulation of the Council of Ministers of 30 April 2010 on Critical Infrastructure Protection Plans
50.Regulation on the Report on Threats to National Security	Regulation of the Council of Ministers of 30 April 2010 concerning the Report on Threats to National Security
51.Regulation on the organisation and operating mode of the Government Centre for Security	REGULATION of the Prime Minister of 11 April 2011 on the organisation and operating mode of the Government Centre for Security
52.Order on the organisation and operating mode of the Government Centre for Security	ORDER No. 78 of the Prime Minister of 11 October 2011 on the organisation and operating mode of the Government Crisis Management Team
53.information_exchange_in_case_of_radiation_emergency_on_national_scale	Scheme of information exchange in case of radiation emergency on national scale

54.Act on Civil Service	Extract from Act of 21 November 2008 on Civil Service
55.Civil Service Principles and on Ethics of Civil Service	The Ordinance no 70 of the Prime Minister of 6 October 2011 on the guidelines for compliance with the rules of the civil service and on the principles of the civil service code of ethics
55a. Act on public information	Act of Parliament of 6th October 2001 on access to public information
55b. Act on the Provision of Information on the Environment and its Protection	Act of Parliament of 3rd October 2008 on the Provision of Information on the Environment and its Protection
PAA REPORTS & POLISH NUCLEAR POWER PROGRAM	
56.National report of Poland on compliance with the obligations of the convention on nuclear safety 2010	National report of Poland on compliance with the obligations of the convention on nuclear safety. Polish 5th national report as referred to in Article 5 of the Convention on Nuclear Safety, August 2010.
57.National report of Poland on compliance with the obligations of the convention on nuclear safety 2012	National report of Poland on compliance with the obligations of the convention on nuclear safety, Second CNS Extraordinary Meeting, May 2012
58.National Report of Poland - Joint Convention 2011	National report of Poland on compliance with the obligations of the joint convention on the safety of spent fuel management and on the safety of radioactive waste management. Polish 4th national report as referred to in art 32 of the Joint convention, October 2011
59.Annual report 2011	Activities of the President of National Atomic Energy Agency and Assessment of Nuclear Safety And Radiological Protection In Poland in 2011
60.Polish Nuclear Power Program	Polish Nuclear Power Program - project, January 2011
PAA MAJOR INTERNAL DOCUMENTS AND ORDERS	
61.PAA mission, vision and operational strategy	Mission, Vision and Operational Strategy of the National Atomic Energy Agency
62.PAA task-oriented budget	Task oriented budget as of 2013
63.Guidelines for the program of actions in PAA 2009	Guidelines For The Program Of Actions necessary to be undertaken in the National Atomic Energy Agency, 2009
64.Order No 4 of the President of National Atomic Energy Agency on Establishing Organizational Bylaws of the National Atomic Energy Agency	ORDER No 4 of 4 November 2011 by the President of National Atomic Energy Agency on Establishing Organizational Bylaws of the National Atomic Energy Agency
65.Organizational chart 2011	National Atomic Energy Agency Organizational chart
66.Order No 2 of the Director General on the recruitment of candidates for higher positions in civil service	Order No 2 of the Director General of the PAA of 6 September 2011 on the recruitment for higher positions in civil service at the PAA
67.Order No 3 of the Director General on the recruitment of candidates for civil service corps	Order No 3 of the Director General of the PAA of 26 October 2011 on the recruitment of candidates for civil service corps at the PAA
68.Order No 1 of the PAA President on adoption of the Management control Rules in the National Atomic Energy Agency	RESOLUTION No. 1 of the PRESIDENT OF THE NATIONAL ATOMIC ENERGY AGENCY Of 5 June 2012 regarding the adoption of the Management control Rules in the National Atomic Energy Agency
69.Order No 5 of the PAA President on the appointment of a team to coordinate the	RESOLUTION No. 5 OF THE PRESIDENT OF THE NATIONAL ATOMIC ENERGY AGENCY Of 28

preparation and operation of IRRS mission	November 2012 regarding the appointment of a team to coordinate the preparation and operation of IRRS mission in the National Atomic Energy Agency, its tasks and manner of decision-making
70.Order No 13 of the Director General on Individual Professional Enhancement Programme	RESOLUTION NO. 13 OF THE GENERAL DIRECTOR OF THE NATIONAL ATOMIC ENERGY AGENCY of 29 November 2012 regarding the Individual Professional Enhancement Programme for members of the civil service staff at the National Atomic Energy Agency
70a. Order No 2_2013 of the Director General on management of key processes	ORDER No 2 of 1 February 2013 of the Director General of the National Atomic Energy Agency regarding Management of Key Processes in the National Atomic Energy Agency
PAA INTERNAL PROCEDURES	
71.Complaints and Requests Procedure	Complaints and Requests Procedure
72.Procedure for creating strategies and plans of National Atomic Energy Agency	Procedure No. 06/BDG for creating strategies and plans of National Atomic Energy Agency
73.Procedure for developing draft governmental documents in PAA	Procedure No 001/DP for developing draft governmental documents at the National Atomic Energy Agency
74.Procedure for approval of draft normative acts and public hearing of draft resolutions at PAA	Procedure No 002/DP for approval of draft normative acts and public hearing of draft resolutions at the National Atomic Energy Agency
75.Procedure for handling correspondence in the Radiological Protection Department	Procedure No 001/DNZ for handling correspondence in the Ionising Radiation Use Control Department (Radiological Protection Department after organizational changes)
76.Procedure for surveillance controls by Nuclear Regulatory Inspectors at the Radiological Protection Department	Procedure No 002/DOR for surveillance controls by Nuclear Regulatory Inspectors at the Radiological Protection Department
77.Instructions for radiological protection inspections by Nuclear Regulatory Inspectors of the Radiological Protection Department	Instructions No 001/002/DOR for radiological protection inspections by Nuclear Regulatory Inspectors of the Radiological Protection Department
78.Procedure for supervision over documentation in the Radiological Protection Department	Procedure No 003/DNZ for supervision over documentation in the Ionising Radiation Use Control Department (Radiological Protection Department after organizational changes)
79.Procedure for preparing draft permits of the PAA President for activity supervised by the Radiological Protection Department	Procedure No 005/DNZ for preparing draft permits of the PAA President for activity supervised by the Ionising Radiation Use Control Department (Radiological Protection Department after organizational changes)
80.Procedure for issuing permits for activity of permanent operation of a nuclear installation	Procedure No 001/DBJ for issuing permits for activity of permanent operation of a nuclear installation, Nuclear Safety Department
81.Procedure for regulatory inspections related to nuclear safety and radiological protection and physical protection	Procedure No 003/DBJ for regulatory inspections related to nuclear safety and radiological protection and physical protection conducted by nuclear regulatory inspectors of the Nuclear Safety Department
82.Procedure for inspecting nuclear material safeguards	Procedure No 004/DBJ for inspecting nuclear material safeguards, Nuclear Safety Department
83.Procedure for registering nuclear materials	Procedure No 004/DBJ for registering nuclear materials, Nuclear and Radiation Safety Department

83a. Emergency Procedure No 1	Radiation Emergency Center Procedure no 1 proceedings for the officer on duty in case of notification on radiation emergency
83b. Emergency Procedure No 2	Radiation Emergency Center Procedure no 2 proceedings for the President of PAA in case of notification on radiation emergency
DOCUMENTS RELATED TO SAFETY ACTIVITES – NUCLEAR SAFETY DEPARTMENT	
84.MARIA Permit 2009	PERMIT 1/2009/MARIA of 31 March 2009 related to nuclear safety and radiological protection
84_1.Annex1	ANNEX 1/2009/MARIA to PERMIT 1/2009/MARIA of 31 March 2009
84_2.Annex2	ANNEX 2/2009/MARIA to PERMIT 1/2009/MARIA of 31 March 2009, amended with Annex 1/2009/MARIA of 6 August 2009
84_3.Annex3	ANNEX 3/2010/MARIA to PERMIT 1/2009/MARIA of 31 March 2009, amended with Annex 1/2009/MARIA of 6 August 2009 and Annex 2009/MARIA of 12 October 2009
84_4.Annex4	ANNEX 4/2010/MARIA to PERMIT 1/2009/MARIA of 31 March 2009, amended with Annex 1/2009/MARIA of 6 August 2009, Annex 2/2009/MARIA of 12 October 2009, and Annex 3/2009/MARIA of 21 January 2010
84_5.Annex5	ANNEX 5/2010/MARIA to PERMIT 1/2009/MARIA of 31 March 2009, amended with Annex 1/2009/MARIA of 6 August 2009, Annex 2/2009/MARIA of 12 October 2009, Annex 3/2010/MARIA of 21 January 2010 and Annex 4/2010/MARIA of 12 February 2010.
84_6.Annex6	ANNEX 6/2010/MARIA to PERMIT 1/2009/MARIA of 31 March 2009, amended with Annex 1/2009/MARIA of 6 August 2009, Annex 2/2009/MARIA of 12 October 2009, Annex 3/2010/MARIA of 21 January 2010, Annex 4/2010/MARIA of 12 February 2010 and Annex 5/2010/MARIA of 10 March 2010
84_7.Annex7	ANNEX 7/2010/MARIA to PERMIT 1/2009/MARIA of 31 March 2009, amended with Annex 1/2009/MARIA of 6 August 2009, Annex 2/2009/MARIA of 12 October 2009, Annex 3/2010/MARIA of 21 January 2010r, Annex 4/2010/MARIA of 12 February 2010, Annex 5/2010/MARIA of 10 February 2010 and Annex 6/2010/MARIA of 10 May 2010
84_8.Annex8	ANNEX 8/2012/MARIA to PERMIT 1/2009/MARIA of 31 March 2009, amended with Annex 1/2009/MARIA of 6 August 2009, Annex 2/2009/MARIA of 12 October 2009, Annex 3/2010/MARIA of 21 January 2010, Annex 4/2010/MARIA of 12 February 2010, Annex 5/2010/MARIA of 10 March 2010, Annex 6/2010/MARIA of 10 May 2010 and Annex 7/2010/MARIA of 16 July 2010
85.Report on fuel core conversion	Report on Letter no. NCBJ/DI/820/2012 of 23/07/2012 (supplemented with letter no. NCBJ/D/843/2012 of 31/07/2012) on issuing an annex to Permit no. 1/2009/MARIA on operation of MARIA research reactor

	allowing operation of the reactor with low enriched MC/5/485 fuel in the MARIA reactor core and replacement of currently used highly enriched MR-6/430 fuel (core conversion) – example of safety assessment
85_1.Analysis of the Research Reactor MARIA MC fuel elements	Transient Analysis of the Research Reactor MARIA MC fuel elements using RELAP5 mod3.3 – example of safety assessment
86.Periodic Inspection Plan 2012	2012 Periodic Inspection Plan for Inspections Conducted by Nuclear Regulatory Inspectors from Nuclear Installation Inspection Division
87_1.Inspection Authorisation_4_11	Inspection authorisation 4/2011/MARIA
87_2.Inspection Authorisation_2_12	Inspection authorisation 2/2012/MARIA
88_1.Inspection Instructions_4_11	Instructions for inspection of MARIA reactor in the National Centre for Nuclear Research (NCBJ) in Świerk based on Inspection Authorisation 4/2011/MARIA
88_2.Inspection Instructions_2_12	Instructions for inspection of MARIA reactor in the National Centre for Nuclear Research (NCBJ) in Świerk based on Inspection Authorisation 2/2012/MARIA
89_1.Inspection Report_4_11	REPORT 4/2011/MARIA on the inspection ordered by the Chief Nuclear Regulatory Inspector under Inspection Authorisation 4/2011/MARIA of 21 October 2011 in MARIA reactor of the National Centre for Nuclear Research (NCBJ) in Otwock-Świerk
89_2.Inspection Report_2_12	REPORT 2/2012/MARIA on the inspection ordered by the Chief Nuclear Regulatory Inspector under Inspection Authorisation 2/2012/MARIA in MARIA research reactor of the National Centre for Nuclear Research (NCBJ) in Otwock
90_1.Internal memo concerning operation report1	Internal memo concerning Report on MARIA operation in the 2nd quarter of 2011
90_2.Internal memo concerning operation report2	Internal memo concerning Report on MARIA operation in the 3rd quarter of 2011
90_3.Internal memo concerning operation report3	Internal memo concerning Report on MARIA operation in the 3rd quarter of 2012
91_1.Post inspection notice1	POST-INSPECTION NOTICE 2011
91_2.Post inspection notice2	POST-INSPECTION NOTICE 2012
DOCUMENTS RELATED TO SAFETY ACTIVITES – RADIOLOGICAL PROTECTION DEPARTMENT	
92.Permit activities	PERMIT D-17384 issued by the President of National Atomic Energy Agency with annex
93.Permit cancel	Decision by President of PAA to Cancel Permit D-15565 of 8 Feb 2005 issued to: ATIVON sp. z o.o.
94.Notification acceptance	ACCEPTANCE OF NOTIFICATION R-8507 concerning the activity mentioned in article 4.1.1 of the Atomic Law, involving transport and use of radioactive sources
95.Inspection authorization and report Radiological Protection Department	INSPECTION AUTHORISATION 117/2012 and REPORT DJ129012012 on the inspection ordered by the President of the National Atomic Energy Agency Inspection Authorisation 117/2012 of 7 Dec. 2012
96.Report on crime	Notice of committed crime
97.activities inspections	Schedule of inspection cycles depending activity

DOCUMENTS RELATED TO SAFETY ACTIVITES – RADIATION EMERGENCY CENTRE	
98.Radiation event in National Crisis Management Plan	National Crisis Management Plan 2012 - fragments regarding radiation event
99.Radiation situation announcement April 2011	ANNOUNCEMENT of PRESIDENT OF NATIONAL ATOMIC ENERGY AGENCY 18 April 2011 on radiation situation in Poland in 1st quarter of 2011
100.Radiation situation announcement July 2011	ANNOUNCEMENT of PRESIDENT OF NATIONAL ATOMIC ENERGY AGENCY 14 July 2011 on radiation situation in Poland in 2nd quarter of 2011
101.Radiological threat announcement related to Fukushima	Announcement of the Minister of Health concerning the radiological threat related to the failure in FUKUSHIMA DAI-ICHI power plant in Japan, 28 March 2011
102.Hospital emergency response checklist	Hospital emergency response checklist. An *all-hazards* tool for hospital administrators and emergency managers. Prepared by World Health Organization, 2011.
OTHER DOCUMENTS	
103.PL_CZ_Agreement	A g r e e m e n t between the Government of the Republic of Poland and the Government of the Czech Republic on Early Notification of a Nuclear Accident and on Exchange of Information on Peaceful Uses of Nuclear Energy, Nuclear Safety and Radiation Protection
104. Answers to SSG16 by NEPIO	Answers to SSG16 questionnaires provided by the Ministry of Economy (MG)
105. Answers to SSG16 by Operating Organization	Answers to SSG16 questionnaires provided by the Polish Energy Group (PGE)

APPENDIX VII – IAEA REFERENCE MATERIALL USED FOR THE REVIEW

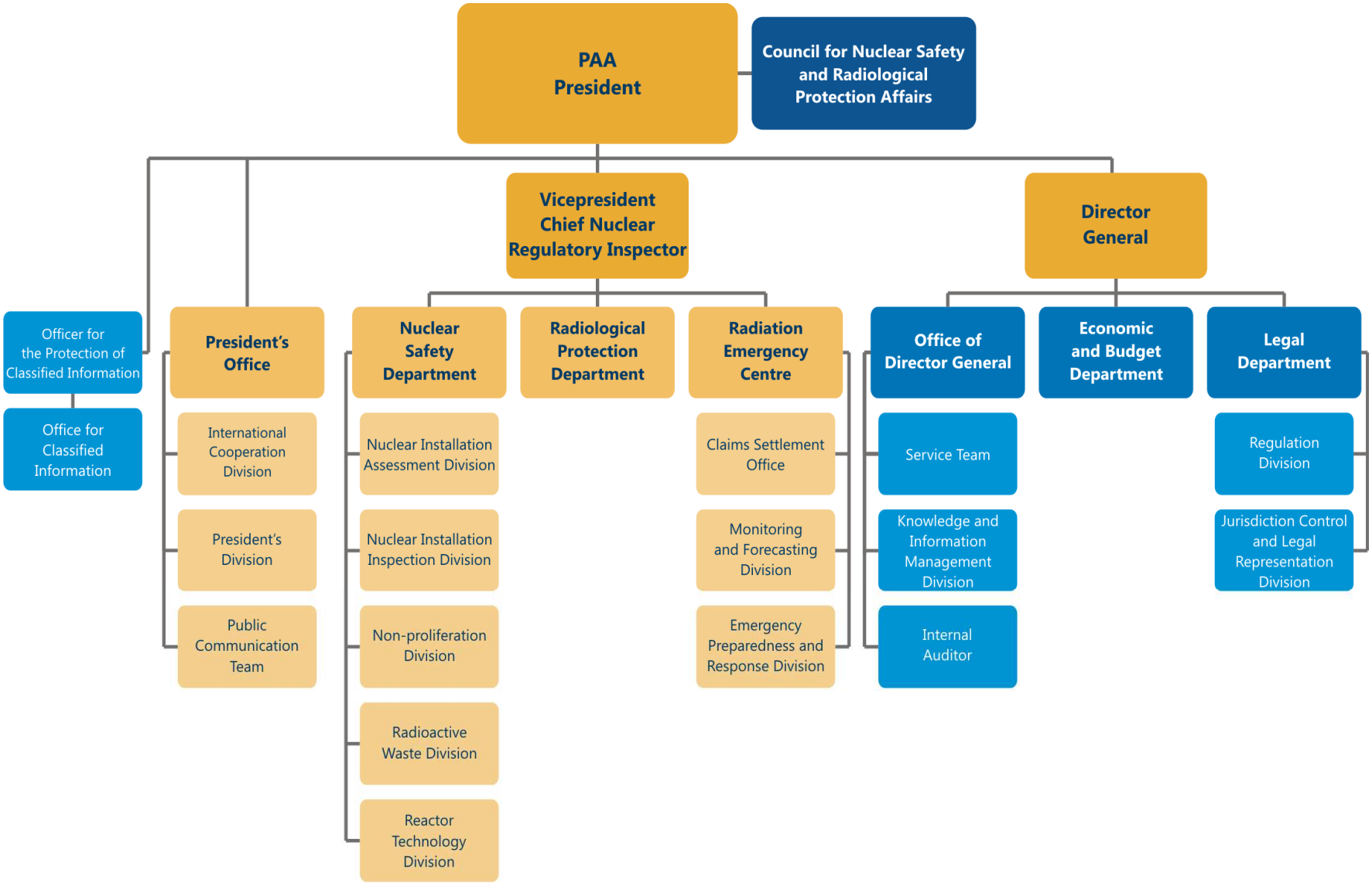
1. **INTERNATIONAL ATOMIC ENERGY AGENCY -** No. SF-1 - Fundamental Safety Principles
2. **INTERNATIONAL ATOMIC ENERGY AGENCY** - Governmental, Legal and Regulatory Framework for Safety General Safety Requirement Part 1 (Vienna2010)
3. **INTERNATIONAL ATOMIC ENERGY AGENCY** - Preparedness and Response for a Nuclear and Radiological Emergency Safety Requirement Series No. GS-R-2 IAEA Vienna (2002)
4. **INTERNATIONAL ATOMIC ENERGY AGENCY** The Management System for Facilities and Activities. Safety Requirement Series No. GS-R-3 IAEA, Vienna (2006)
5. **INTERNATIONAL ATOMIC ENERGY AGENCY** – Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards, General Safety Requirements Part 3, No. GSR Part 3 (Interim Edition), IAEA, Vienna (2011)
6. **INTERNATIONAL ATOMIC ENERGY AGENCY** – Safety assessment for facilities and activities, General Safety Requirements Part 4, No. GSR Part 4, IAEA, Vienna (2009)
7. **INTERNATIONAL ATOMIC ENERGY AGENCY –** Predisposal Management of Radioactive Waste General Safety Requirement Part 5, No. GSR Part 5, IAEA, Vienna (2009)
8. **INTERNATIONAL ATOMIC ENERGY AGENCY** – Decommissioning of Facilities Using Radioactive Material Safety, Safety Requirement Series No. WS-R-5, IAEA, Vienna (2006)
9. **INTERNATIONAL ATOMIC ENERGY AGENCY** - Organization and Staffing of the Regulatory Body for Nuclear Facilities, Safety Guide Series No. GS-G-1.1, IAEA, Vienna (2002)
10. **INTERNATIONAL ATOMIC ENERGY AGENCY** - Review and Assessment of Nuclear Facilities by the Regulatory Body, Safety Guide Series No. GS-G-1.2, IAEA, Vienna (2002)
11. **INTERNATIONAL ATOMIC ENERGY AGENCY** - Regulatory Inspection of Nuclear Facilities and Enforcement by the Regulatory Body, Safety Guide Series No. GS-G-1.3, IAEA, Vienna (2002)
12. **INTERNATIONAL ATOMIC ENERGY AGENCY** - Documentation for Use in Regulatory Nuclear Facilities, Safety Guide Series No. GS-G-1.4, IAEA, Vienna (2002)
13. **INTERNATIONAL ATOMIC ENERGY AGENCY**- - Arrangements for Preparedness for a Nuclear or Radiological Emergency, Safety Guide Series No. GS-G-2.1, IAEA, Vienna (2007)
14. **INTERNATIONAL ATOMIC ENERGY AGENCY –** Criteria for use in Preparedness and Response for a Nuclear or Radiological Emergency, General Safety Guide Series No. GSG-2, IAEA, Vienna (2011)
15. **INTERNATIONAL ATOMIC ENERGY AGENCY** - Safety of Nuclear Power Plants: Design, Specific Safety Requirement Series SSR-2/1 IAEA, Vienna (2012)
16. **INTERNATIONAL ATOMIC ENERGY AGENCY**– Safety of Nuclear Power Plants: Operation, Safety Requirement Series No. NS-R-2, IAEA, Vienna (2000)
17. **INTERNATIONAL ATOMIC ENERGY AGENCY** - Safety of Research Reactors, Safety Requirement Series No. NS-R-4, IAEA, Vienna (2005.)

18. **INTERNATIONAL ATOMIC ENERGY AGENCY** - Periodic Safety Review of Nuclear Power Plants Specific Safety Guide SSG-25, IAEA, Vienna (2013)
19. **INTERNATIONAL ATOMIC ENERGY AGENCY** - A System for the Feedback of Experience from Events in Nuclear Installations Safety Guide No. NS-G-2.11, IAEA, Vienna (2006)
20. **INTERNATIONAL ATOMIC ENERGY AGENCY**– Assessment of Occupational Exposure Due to Intake of Radionuclides Safety Guide Series No. RS-G-1.2, IAEA, Vienna (1999)
21. **INTERNATIONAL ATOMIC ENERGY AGENCY** - Assessment of Occupational Exposure Due to External Sources of Radiation Safety Guide Series No. RS-G-1.3, IAEA, Vienna (1999)
22. **INTERNATIONAL ATOMIC ENERGY AGENCY** - Building Competence in Radiation Protection and the Safe Use of Radiation Sources, Safety Guide Series No. RS-G-1.4, IAEA, Vienna (2001)
23. **INTERNATIONAL ATOMIC ENERGY AGENCY** - Establishing the safety infrastructure for a nuclear power programme, Specific Safety Guide No. SSG 16, IAEA, Vienna
24. **INTERNATIONAL ATOMIC ENERGY AGENCY –** Classification of Radioactive Waste, General Safety Guide No. GSG-1, IAEA, Vienna (2009)
25. **INTERNATIONAL ATOMIC ENERGY AGENCY –** Regulatory Control of Radioactive Discharge to the Environment, Safety Guide Series No. WS-G-2.3, IAEA, Vienna (2000)
26. **INTERNATIONAL ATOMIC ENERGY AGENCY –** Safety Assessment for the Decommissioning of Facilities Using Radioactive Material, Safety Guide Series No. WS-G.5.2, IAEA, Vienna (2009)
27. **INTERNATIONAL ATOMIC ENERGY AGENCY** - Convention on Early Notification of a Nuclear Accident (1986) and Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (1987), Legal Series No. 14, Vienna (1987).
28. **INTERNATIONAL ATOMIC ENERGY AGENCY** - Generic Assessment Procedures for Determining Protective Actions during a Reactor Accident, IAEA-TECDOC-955, IAEA, Vienna (1997).
29. **[RCM-2002-12/1]** Regulation of the Council of Ministers of 3 December 2002 on documents required when submitting an application to issue a license for the performance of activities involving exposure to ionizing radiation
30. **[RCM-2002-12/2**] Regulation of the Council of Ministers of 17 December 2002 on stations for early detection of radioactive contaminations and units conducting measurements of radioactive contaminations.
31. **[RCM-2004-04/1]** Regulation of the Council of Ministers of 27 April 2004 on prior information to the general public in the event of a radiation emergency.
32. **[RCM-2004-04/2]** Regulation of the Council of Ministers of 27 April 2004 on values of intervention levels for particular types of intervention measures and criteria for revoking these measures.
33. **[RCM-2004-04/3]** Regulation of the Council of Ministers of 27 April 2004 on specifying entities competent for performing inspection of foodstuffs and feeding stuffs with regard to

their compliance with maximum admissible levels of radioactive contamination following a radiation emergency.

34. **[RCM-2007-02]**Regulation of the Council of Ministers of 20 February 2007 on emergency preparedness and response plans for a radiation emergency
35. **[RCM-2007-03]** Regulation *of the Council of Ministers of 23 March 2007 on the requirements on registration of individual doses*
36. **[RCM-2009-12]** Regulation of the Council of Ministers of 15 December 2009 on establishment and operation of crisis management centres by the governmental authorities
37. **[RPM-2011-04]** Regulation of epy Prime Minister of 11 April 2011 on the organisation and operating mode of the Government Centre for Security
38. Law on Crisis management of 26 April 2007 with amendments
39. Atomic Law Act of 29 November 2000
40. EWS Early Warning System
41. PAA National Atomic Energy Agency
42. CMC Crisis Management Centre of the Ministry of Interior
43. GCMT Governmental Crisis Management Team
44. GCS Government Centre for Security
45. CEZAR Radiation Emergency Centre of the PAA
46. NCMP National Crisis Management Plan

APPENDIX VIII – ORGANIZATIONAL CHART



APPENDIX IX – NATIONAL EMERGENCY PREPAREDNESS

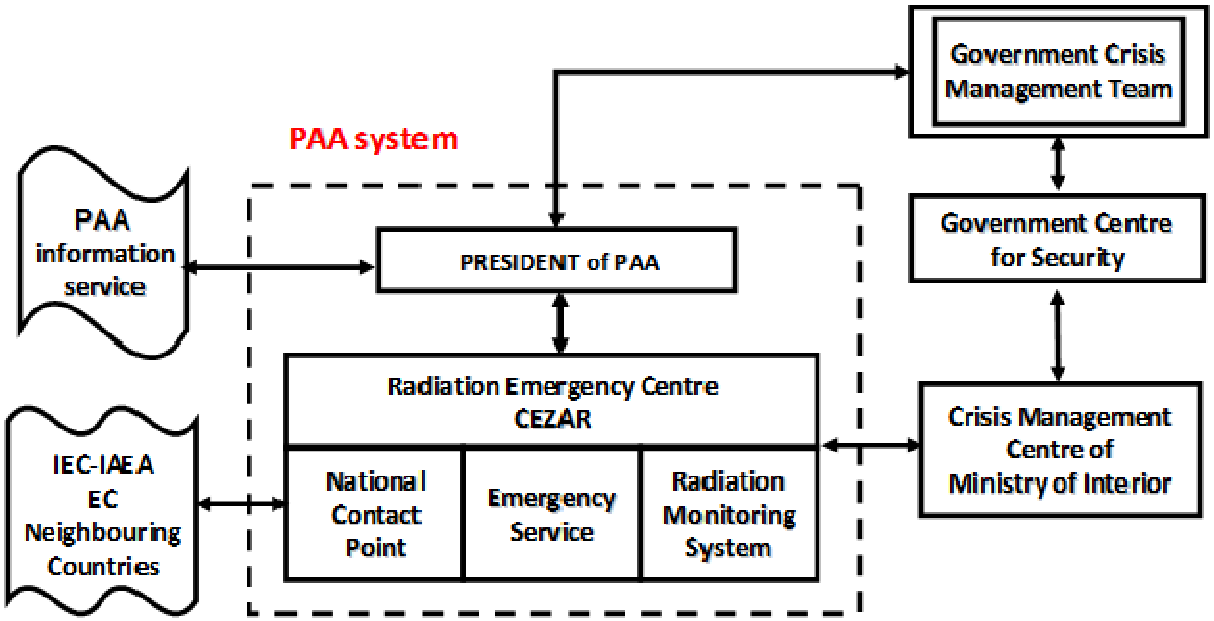


Fig. IX.1. Position of PAA at national level of emergency preparedness and response

Leading entity MONITORING	Leading entity WARNING	Leading entity ALARMING
PAA Radiation Emergency Centre (CEZAR)[1] • system of measurement stations and units	PAA Radiation Emergency Centre (CEZAR)[2,3] • in case of a possible radiation emergency the prior information is sent to the governors of the region where there are possible consequences of the emergency event • information about the radiation emergency is sent to the Minister of Interior (in fact the information be sent to the GCS) • in case of radiation emergency warnings and information are published on the webpage www.paa.gov.pl in the section "News" • a map of Poland with results of gamma dose rate measurements is updated daily on the webpage www.paa.gov.pl	Governor of region[2] • prior information for the public as an act of the local law

Fig. IX.2 Organization of the system of threats monitoring, warning and alarming in event of radioactive contamination. [1)] Atomic Law; [(2)] [RPM-2004-04]; [(3)] [RPM-2007-02]

Risk at national level	Phases of emergency management	Minister of Interior	Ministry of Administration and Digitization	Ministry of Health	Ministry of Environment	Ministry of Transport, Construction and Maritime Economy	Ministry of Agriculture and Rural Development	Ministry of Defence	Ministry of Economy	Ministry of Finance	Ministry of Foreign Affairs	National Security Agency	Intelligence Agency	President	The Council of Ministers	Governor of region
Radioactive contamination	prevention				PAA											
	preparedness				PAA											
	response				PAA											
	recovery															
Terrorist attack (if. radioactive material is suspected)	prevention														GCS	S
	preparedness															
	response				PAA										GCS	
	recovery															

Fig.: IX.3: The tasks and responsibilities of participants in the form of crisis management safety net

- Leading - Supporting S - Tasks carried out by the local government

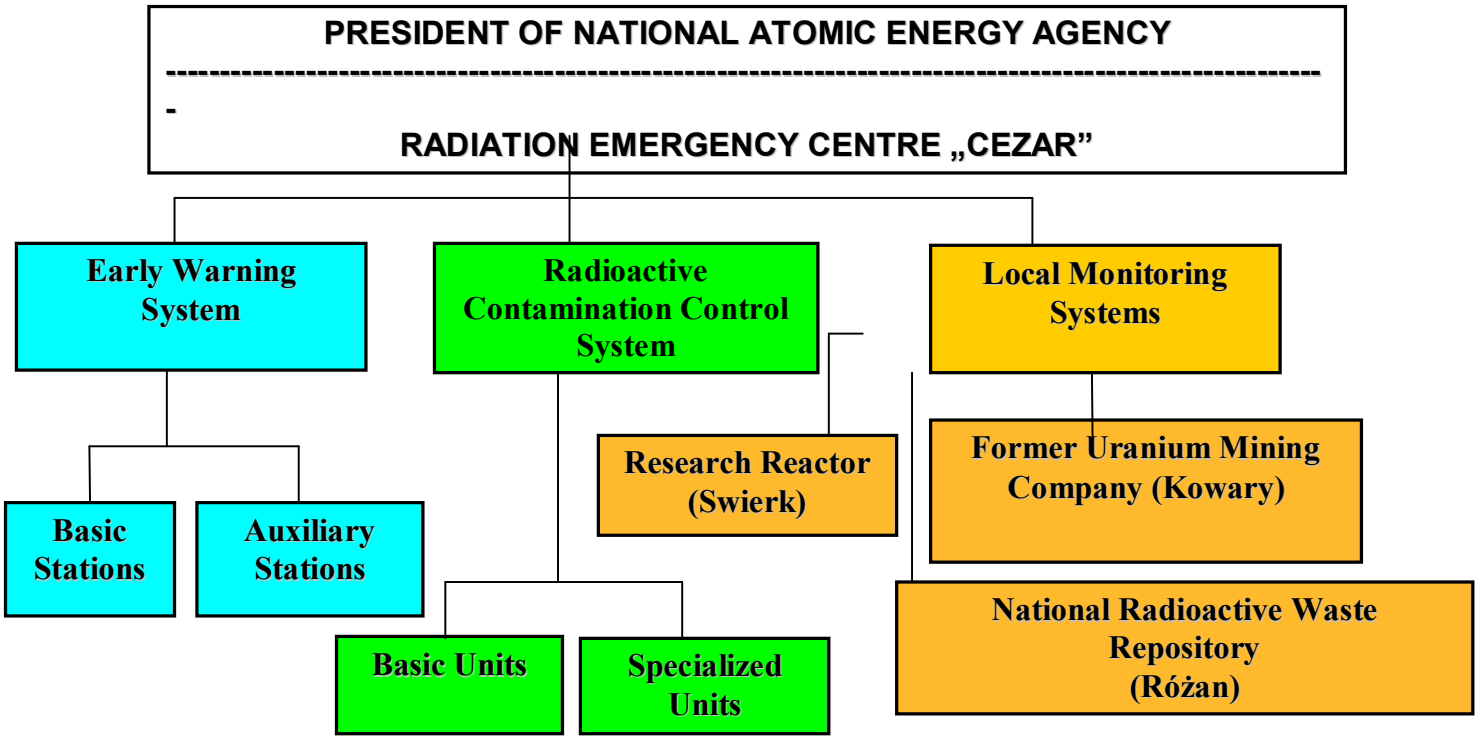


Fig. IX.4. System of monitoring radiation situation at Poland.