



Hungarian Atomic Energy Authority

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Guideline PP-11

**Preparation and submittal of physical
protection license applications**

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FOREWORD FROM THE DIRECTOR GENERAL

The Hungarian Atomic Energy Authority (hereinafter referred to as HAEA) is a central state administration organ (a so-called government office) having nation-wide competence in the field of peaceful use of atomic energy; it operates under the direction of the Government, it has independent tasks and scope of authority. The HAEA was established in 1990 by the Government of the Republic of Hungary with Govt. decree 104/1990. (XII. 15.) Korm. on the scope of tasks and competence of the Hungarian Atomic Energy Commission and the HAEA.

The public service of the HAEA as defined in law is to perform and coordinate, independently of organizations having interest in the application of atomic energy, the regulatory tasks in relation to the peaceful and safe use of atomic energy, including the safety of nuclear facilities and materials, nuclear emergency response and nuclear security, and the corresponding public information activity, and to make proposal to develop and amend, and to offer an opinion on proposed legislations corresponding to the use of atomic energy.

The fundamental nuclear safety objective is to ensure the protection of individuals and groups of the population and of the environment against the hazards of ionising radiation. This is ensured with effective safety measures implemented and adequately maintained in the nuclear facility.

The radiation protection objective is to keep the radiation exposure of the operating personnel and the public all times below the prescribed limits and as low as reasonable achievable. This shall be ensured in the case of radiation exposures occurring during design basis accidents, and as far as reasonably possible during beyond design basis accidents and severe accidents.

The technical safety objective is to prevent or avoid the occurrence of accidents with high confidence, and the potential consequences occurring in the case of every postulated initiating event taken into account in the design of the nuclear facility shall remain within acceptable extent, and the probability of severe accidents shall be adequately low.

The HAEA determines the way how the regulations should be implemented in guidelines containing clear, unambiguous recommendations in agreement with the users of atomic energy. These guidelines are published and accessible to every members of the public. The guidelines regarding the implementation of nuclear safety, security and non-proliferation requirements for the use of atomic energy are published by the director general of the HAEA.

FOREWORD

The internationally accepted bases of physical protection are represented by the Law Order 8 of 1987 on the promulgation of the International Convention on the Physical Protection of Nuclear Materials, the Act LXII of 2008 on the promulgation of the Amendment to the Convention on Physical Protection of Nuclear Materials approved in the frame of the International Atomic Energy Agency and promulgated by Law-decree 8 of 1987 amended by a Diplomatic Conference organized by the IAEA signed on July 8, 2005, and the Act XX of 2007 on the promulgation of the International Convention for the Suppression of Acts of Nuclear Terrorism.

The realization of the stipulations undertaken by Hungary, at the highest level, is represented by the Act CXVI of 1996 (hereinafter referred to as Atomic Act), which includes the fundamental security principles and establishes the frame of the detailed physical protection regulations.

The Govt. decree 190/2011. (IX. 19.) Korm. published based on the authorization of the Act (hereinafter referred to as Government Decree) establishes the legal requirements for the physical protection of the use of atomic energy and for the connecting licensing, reporting and inspection system.

The HAEA is authorized to develop recommendations regarding the implementation of requirements established in laws, which are published in the form of guidelines and made accessible on the website of the HAEA.

For the fast and smooth conduct of licensing and inspection procedures connecting to the regulatory oversight activity, the Authority encourages the licensees to take into account the recommendations of the guidelines to the extent possible.

If methods different from those laid down in the regulatory guidelines are applied, then the Authority shall conduct an in-depth examination to determine if the applied method is correct, adequate and full scope, which may entail a longer regulatory procedure, involvement of external experts and extra costs.

The guidelines are revised regularly as specified by the HAEA or out of turn if initiated by a licensee.

The regulations listed are supplemented by the internal regulations of the licensees and other organizations contributing to the use of atomic energy (designers, manufacturers etc.), which shall be developed and maintained according to their quality management systems.

Before applying a given guideline, always make sure whether the newest, effective version is considered. The valid guidelines can be downloaded from the HAEA's website: <http://www.oah.hu>.

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1. INTRODUCTION

1.1. Scope and objective of the guideline

The guideline contains recommendations on how to meet the provisions of Government decree.

This guideline provides detailed guidance with regard to the content requirements for the preparation and submittal of physical protection license applications.

Recommendations of the Authority on methods how to comply with the respective requirements of the Government decree and details of content requirements are contained in other guidelines.

1.2. Corresponding laws and regulations

The legal background of the nuclear safety requirements is established in the Atomic Act and the Government decree, as well as the following legal documents:

- a) Act CXL of 2004 on general rules of public administration procedures and services (hereinafter referred to as Ket)
- b) Act XCIII of 1990 on dues (hereinafter referred to as Itv.)

2. TERMINOLOGY

This guideline used the following terminology in addition to the terms determined in Section 2 of the Atomic Act and Section 2 of the Government decree.

Unacceptable radiological consequences:

The consequence of a sabotage against a nuclear facility, nuclear material, radioactive source or radiative waste is unacceptable, if it causes or may cause a nuclear emergency; and if the sabotage entails significant exceedance of the dose limit of certain individuals or a group of individuals, or it can induce such overexposure.

Authority:

The HAEA and the Hungarian Police Headquarters.

3. RECOMMENDATIONS OF THE GUIDELINE

3.1. Basic requirements

Annex 4 of the Government decree contains the minimum requirements for the physical protection plan to be prepared according to Section 18 (1) of the Government decree.

Recommendations on the methods how to comply with the respective requirements of the Government decree, and the details of the content requirements are included in other guidelines, the summary table of which can be found in the Annex.

It is to be emphasized that according to Section 18 (2) of the Government decree the obligant shall prepare a contingency plan as part of the physical protection plan, which determines the scope of possible events including also the inappropriate technical operation of the physical protection system and the procedures of additional measures and interventions.

3.2. Activities subject to licensing

The establishment (including design and operation) of the physical protection system in accordance with the physical protection plan to be prepared pursuant to Section 18 (1) of the Government decree, the extension of the validity of the physical protection plan and if the modification of the physical protection plan is concerned then the modification of the physical protection system is subject to authority licensing.

According to Section 32 (1) of the Government decree:

“(1) Regulatory license is required:

a) to construct the physical protection system of nuclear facility, interim store and final repository of radioactive waste, nuclear material, radioactive source and radioactive waste according to the physical protection plan,

b) to extend the license of the physical protection system of nuclear facility, interim store and final repository of radioactive waste, nuclear material, radioactive source and radioactive waste,

c) to transport nuclear material, radioactive source and radioactive waste requiring level A, B or C physical protection,

d) to modify a licensed physical protection system, if the modification needs modification of the physical protection plan.”

3.3. Proceeding authority, submittal of the license application

According to Section 31 of the Government decree: *“The HAEA shall perform regulatory licensing of construction, operation and modification of the physical protection system of nuclear facility, interim store and final repository of radioactive waste and of nuclear material, radioactive source and radioactive waste.”*

The applicant shall pay dues for the procedure aimed at obtaining the physical protection license.

The application should be submitted and addressed to the director general of HAEA, via the General Nuclear Directorate of the HAEA

Address: Hungary, H-1036 Budapest, Fényes A. u. 4.

Postal address: 1539 Budapest, P.O. Box 676.

Fax: +36 1 436 48 43

The subject of the application should accurately indicate the denomination of the procedure which is applied for.

According to Section 32 (5) of the Govt. Decree: *“If the obligant does not submit the background documentation of application via the client gate, then the documentation shall be submitted in three printed copies and one copy on electronic media in a text editor platform preliminary agreed with HAEA”.*

According to Section 9 (1) of the Act CXL of 2004 on the general rules of administrative proceedings and services (Ket): *“the language of the public administration authority procedure”*, so the one's aimed at obtaining a physical protection license, *“is Hungarian”*.

In accordance with Paragraph a) of Section 32 (1a) the duration of the proceeding for the application of the regulatory license is six months for the construction of the physical protection system in the case of nuclear facility, interim store and final repository of radioactive waste, which can be extended one time in justified cases by up to 90 days. The other licensing procedures are conducted with a deadline of 21 days (with possible extension by additional 21 days) pursuant to Ket. The Authority may request supplementation of the application if any required information is missing. If the supplementation does not arrive until the deadline specified by the Authority, then the Authority should decide about the application based on the information available. During the consideration of the application the Authority informs the Applicant in a resolution whether it grants license or not to the applied activity, indicates the license conditions and specifies the validity of the license. The National Police Headquarters participates in the

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proceeding as a special authority. Maximum duration of the special authority procedure is 15 days, which can be extended once by the special authority with maximum 15 days if justified. The duration of special authority procedure and of supplementation should not count in the duration of the administration duration of the proceeding authority.

If the requirements specified in Sections 6-30 of the Govt. Decree are complied with, the HAEA shall involve the National Police headquarters to license any deviation from the requirements included in Annex 2 and 3.

Regarding the physical protection licenses related to transportation, the HAEA shall inform the National Directorate General for Disaster Management and the National Police Headquarters about the concrete transport route

3.4. Deadlines, validity times

In harmony with Section 37 (3) of the Government decree: in the case of a nuclear facility, except for that equipped with a nuclear reactor of less than 1 MW thermal power, interim store and final repository of radioactive waste the obligant shall submit the application according to Subsection (1) a) of Section 32 to the HAEA **not later than 6 month after the information of the resolution declaring the DBT** for the specific facility and to implement the physical protection plan according to Section 18 (1) (a). The application shall contain the physical protection plan. It is important to emphasize that according to Section 30 of the Government decree, physical protection shall be implemented such a way that it ensures an effective protection against the DBT specified in the resolution for the specific facility. Pursuant to Section 32/A of the Government decree, in the case of a nuclear facility, interim store or final repository of radioactive waste, the obligant should apply for the determination of the DBT at the HAEA. The application should include the type, quantity and activity of the used, processed or stored radioactive source, nuclear material and radioactive waste, the systems and components significant from radiological viewpoint, and the physical protection related evaluation of the suitability of the site. In agreement with the Government decree the HAEA determines the threat related to the programmable systems, against which the obligant should ensure adequate protection.

The obligant should carry out a systematic risk assessment on the programmable systems for approval by the HAEA. The systematic risk assessment should be carried out in accordance with Paragraph 9 of Annex 6; the assessment should be submitted as a part of the construction license application, periodically with the frequency defined in the operation license, and if requested by the HAEA.

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If, in relation to the physical protection system, certain conditions of the requirements of the Government decree are not or not fully complied with, then these conditions shall be indicated in the application, together with a proposal on the date when these conditions are expected to be met. The HAEA, in the resolution licensing the physical protection system, decides on the exemptions regarding non-compliances or partial compliances with the requirements and their permitted duration. Since the HAEA, in the consideration and determination of the exemptions and durations, should take into account the degree of deviation from the specific requirement and the scope, cost and time required for implementation of the necessary measures; so these circumstances are practical to be included in the license application.

Regarding a nuclear facility, interim store or final repository of radioactive waste, nuclear material, radioactive source and radioactive waste the license application for the implementation of the physical protection system according to the physical protection plan shall be submitted to the HAEA, **at least 1 month before the receipt of the first nuclear material, radioactive waste or radioactive source to the site in general, and 6 month before the receipt thereof in case of a nuclear facility, interim store and final repository of radioactive waste; while together with the construction license application in the case of a nuclear facility planned to be constructed.** The physical protection plan shall be attached to the application.

Concerning extension of the license for the physical protection system of a nuclear facility, interim store or final repository of radioactive waste, nuclear material, radioactive source and radioactive waste, the license application shall be submitted to the authority **at least 1 month before the expiry of the license in general, and 6 month before the expiry of the license in the case of nuclear facility, interim store and final repository of radioactive waste.**

If a modification of the physical protection system requires the modification of the physical protection plan, the license application for the modification of the licensed physical protection system should be submitted **at least 2 month before the commencement of the activity** or the expiry of the validity of the license.

Recommendations on the construction and operation of the physical protection system are contained in the guidelines provided by the HAEA. The guidelines are published on the website of the HAEA (www.oah.hu). If the obligant submits the application for license according to (1) a) through c) of Section 32, and if the obligant performs the physical protection activities according to the guidelines, the HAEA and the police shall consider the

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chosen method to be suitable for verifying the fulfilment of the requirements of the physical protection system and do not examine the adequacy of the method used. When using methods other than those described in the guidelines, the HAEA and the police shall assess the correctness, appropriateness and completeness of the method used.

In accordance with Section 35 of the Government decree the **holder of the fix and mobile equipment** that generate ionizing radiation but does not contain radioactive material, who does not hold operation license at the time of entering into force of the Government decree, shall report the equipment to the HAEA **within 30 days after entering into force of the operation license** by using the form developed by the HAEA, and shall describe how the requirements of Subsections 35 (2) and (3) are complied with.

PP-20 Guideline provides detailed recommendations in relation to the reporting of fix and mobile equipment that generate ionizing radiation but does not contain radioactive material.

The physical protection license is valid for 5 years, except for the transport of nuclear material, radioactive source or radioactive waste requiring Level A or B physical protection, when the license is valid only for the specific transport.

3.5. Content of the physical protection plan to be attached to the application for licensing of the physical protection system

Regarding the licensing procedure, the technical content of a physical protection plan to be prepared and submitted according to Section 18 (1) of the Govt. Decree is determined basically by the characteristics of the nuclear and other radioactive material or the nuclear facility to be protected. Accordingly, in harmony with the requirements of the Government decree, the licensing documentation for ensuring the level A, B, C and D physical protection should be developed with different details and technical content.

Additionally, in agreement with the contents of Annex 4 of the Govt. Decree, the technical content for other use of atomic energy should be separated from the content related to transportation of nuclear material, radioactive source and radioactive waste.

3.5.1. Minimum content requirements for the physical protection plan of a nuclear facility, interim store or final repository of radioactive waste, nuclear material, radioactive source and radioactive waste

In agreement with Annex 4 of the Govt. Decree, the physical protection plan of a nuclear facility, interim store or final repository of radioactive waste, nuclear materials, radioactive sources and radioactive wastes shall contain

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minimum the following items (if a guideline specifying a given item or helping its interpretation exists it is displayed within brackets):

1.1. General data:

1.1.1. administrative data: name, address and contact details of the obligant, contact persons, copy of the ownership registry of the real estate, or if the real estate is rented then the contribution declaration of the renter; (PP-6)

1.1.2. identification of the activity;

1.1.3. description of the close environment of a nuclear facility, and a radioactive waste storage and disposal facility: site with coordinates, scaled map with the indication of physical protection important buildings, access routes, routes, rails and waterways in the vicinity; (PP-8)

1.1.4. description of nuclear material, radioactive source and radioactive waste: its type, quantity, activity, physical state, category, use; (PP-1)

1.1.5. description of the management and storage rules of keys for storage equipment and rooms; (PP-13)

1.1.6. identification of technology systems, structures and components that are significant to radiological consequences; (PP-8)

1.1.7. detailed layout with the indication of the artificial barriers, physical protection zones, nuclear and radioactive materials to be protected, physical protection systems, structures and components, guards points, patrol routes, central alarm station; layout of the storage room and rooms of application; (PP-2, PP-4, PP-7, PP-8, PP-9);

1.1.8. identification of potential adversary pathways; and

1.1.9. description of insider tactics; (PP-13)

1.2. data on the organization sub-system of physical protection: (PP-6)

1.2.1. organizational structure of physical protection;

1.2.2. physical protection roles and responsibilities within the organization (managers, assigned contact person);

1.2.3. description of the rule of guarding, and the applied mechanical and electronic asset protection system;

1.2.4. category, organization structure, tasks and rules of operation of armed security guards (if appropriate), number and date of the ordering resolution;

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- 1.2.5. selection of the members of the internal response force; conditions for them;
- 1.2.6. physical protection training of the members of the internal response force and the entire organization;
- 1.2.7. preparation, conduct and evaluation of physical protection exercises; and
- 1.2.8. arms, tools and vehicle (number, type and description) of the internal response forces;
- 1.3. rules of access and regress;
- 1.4. physical protection procedures, quality management data: (PP-6)
 - 1.4.1. documentation system (policy, instructions, procedures); and
 - 1.4.2. accountancy for nuclear materials, radioactive sources and radioactive wastes; description of the rules of use;
 - 1.4.3. rules of access, access rights and the recording of access time points;
 - 1.4.4. security plan of programmable systems;
 - 1.4.5. reporting procedure of events in relation to the operation of the physical protection system;
 - 1.4.6. procedure of investigation of reportable events;
 - 1.4.7. verification of the effectiveness of the physical protection system (exercise programme); and
 - 1.4.8. method, regularity, approval of the revision of the physical protection plan, its storage, name and positions of those having access to the physical protection plan;
- 1.5. data on the technical sub-system of physical protection: (PP-2, PP-3, PP-4, PP-16)
 - 1.5.1. design and operational specification,, components and their functions; (PP-4)
 - 1.5.2. description of deterrence, detection, delay and response tools; (PP-2, PP-3, PP-4, PP-16), and
 - 1.5.3. maintenance and testing programme (PP-14);
- 1.6. external response forces, cooperation with the internal response forces; (PP-16)

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- 1.7. comprehensive evaluation of the physical protection system in reflect to the potential adversary pathways and adversary tactics; (PP-7, PP-8, PP-9, PP-13)
- 1.8. harmony with plans identified in Section 6 (6);
- 1.9. plans and procedures of response actions (contingency plan);
- 1.10. presentation of measures to be implemented if elevated level of physical protection is ordered; and
- 1.11. special rules with regard to regulatory inspections.

3.5.2. Minimum content requirements for the physical protection plan of transport of nuclear materials, radioactive sources and radioactive wastes

During the development of physical protection licensing documentation for the shipment of nuclear or other radioactive materials, with special regard to Section 5 (2) of the Government decree, the requirements included in the technical annexes and appendixes for various mode of transports as established in international agreements on transport of dangerous (including radioactive) goods.

In the physical protection plan related to the transport of nuclear materials, radioactive sources and radioactive wastes, in agreement with the guidance of PP-15, at least the following content requirements shall appear:

- 2.1. description of the material to be transported: denomination, type (radioactive source, nuclear material, waste), activity, category, quantity (gross and net weight), chemical and physical characteristics, isotope abundance, enrichment or depletion in U-235, U-233 or plutonium if nuclear material, maximum of its dose-rate;
- 2.2. name, position and contact details of the person responsible for physical protection during the transport;
- 2.3. description of the transport package and vehicle, detailed drawing of the transport vehicle; in the case of high activity sealed radioactive source, photos of the used packaging and relevant tools and equipment;
- 2.4. primary and alternate routes; frontier posts of entry or exit if appropriate;
- 2.5. planned duration and schedule of the transport;
- 2.6. methods of tracking the shipment;
- 2.7. organizations participating in the transport and the tasks thereof;
- 2.8. physical protection training, evaluation of exercises;

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- 2.9.
- 2.10. description of the physical protection system;
- 2.11.
- 2.12. measures to be implemented if elevated level of physical protection is ordered;
- 2.13. procedure of reporting of physical protection related events;
- 2.14. plans and procedures of response actions (contingency plan);
- 2.15. storage of the physical protection plan, names and positions of those having access to the physical protection plan;
- 2.16. agreement with response forces and other external organizations; special rules with regard to regulatory inspections; and
- 2.17. emergency response plan.

3.5.3. Protection (security) plan of programmable systems

The obligants defined based on Section 20 of the Government decree should ensure the protection of their programmable systems (in harmony with PP-18 Guideline), which should be demonstrated in the physical protection plan. Pursuant to Paragraph 3 of Section 4 the protection (security) plan of programmable systems should include:

- 3.1. registry of the programmable systems, relation between the systems, networks and applications;
- 3.2. roles and responsibilities of the personnel or organization responsible for the physical protection of the programmable systems;
- 3.3. implementation of security measures;
- 3.4. continuous operation, system back-up;
- 3.5. education, training related to the physical protection, physical protection culture;
- 3.6. physical protection review;
- 3.7. change management and lifecycle related to the physical protection of the systems.

Additionally, the protection (security) plan of programmable systems should cover the following (based on Paragraph 7 of Annex 6):

- 7.1. control of physical and logical access,
- 7.2. configuration management,

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- 7.3. identity and password management,
- 7.4. access management,
- 7.5. management of security patches and software updates,
- 7.6. the use of portable devices or mobile storage media,
- 7.7. wireless devices and networks,
- 7.8. remote access, administration and maintenance,
- 7.9. event management, incident management, backup and recovery,
- 7.10. procedures for detecting, analysing, documenting and managing threats and vulnerabilities
- 7.11. regular audits and reviews.

4. ANNEX: THE SYSTEM OF PHYSICAL PROTECTION GUIDELINES

| Number of guideline | Title of guideline |
|---------------------|---|
| PP-1 | Categorization of nuclear material, radioactive source and radioactive waste |
| PP-2 | Detailed requirement levels for systems and components of the deterrence physical protection function |
| PP-3 | Detailed requirement levels for systems and components of the detection physical protection function |
| PP-4 | Detailed requirement levels for systems and components of the delay physical protection function |
| PP-5 | Determination of physical protection areas |
| PP-6 | Security culture |
| PP-7 | Planning of physical protection for unauthorized removal and sabotage against nuclear materials, radioactive sources and radioactive wastes |
| PP-8 | Physical protection planning of nuclear facilities (except for that equipped with a nuclear reactor of less than 1 MW thermal power) and interim stores and final repositories of radioactive wastes |
| PP-9 | Evaluation of adequacy of physical protection of nuclear facilities (except for that equipped with a nuclear reactor of less than 1 MW thermal power) and interim stores and final repositories of radioactive wastes |
| PP-11 | Development and submittal of physical protection license applications |
| PP-12 | Physical protection related reporting system |
| PP-13 | Protection against insiders |
| PP-14 | Operation, maintenance and testing of physical protection systems and components |
| PP-15 | Preparation of the physical protection plan required for the transport of nuclear and other radioactive materials |
| PP-16 | Detailed requirement levels for the response physical protection function |

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|-------|---|
| PP-17 | Physical protection recommendations for a planned nuclear facility or an interim store or final repository |
| PP-18 | Protection requirements of programmable systems of nuclear facilities |
| PP-19 | Physical protection related assessment of the site of a nuclear facility or a radioactive waste repository planned to be constructed, as required for the application to be submitted to obtain the design basis threat |
| PP-20 | Registration of equipment generating ionising radiation without containing radioactive material |