HAEA NSB

HUNGARIAN ATOMIC ENERGY AUTHORITY

Nuclear Safety Bulletin

H-1539 Budapest, P.O. Box 676,
Tel: +36 1 436-9881, Fax: +36 1 436-9883, e-mail: nsd@haea.gov.hu
website: haea.gov.hu

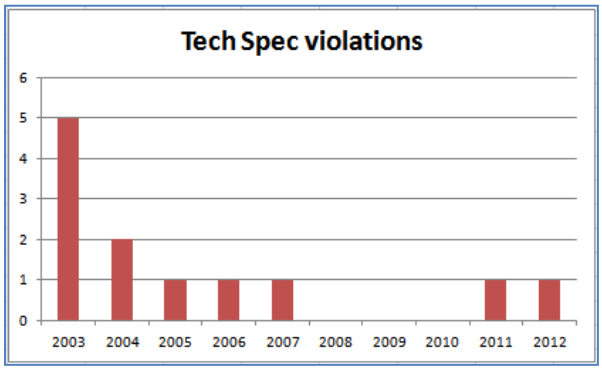
RECENT DEVELOPMENTS IN NUCLEAR SAFETY IN HUNGARY

May 2013

General

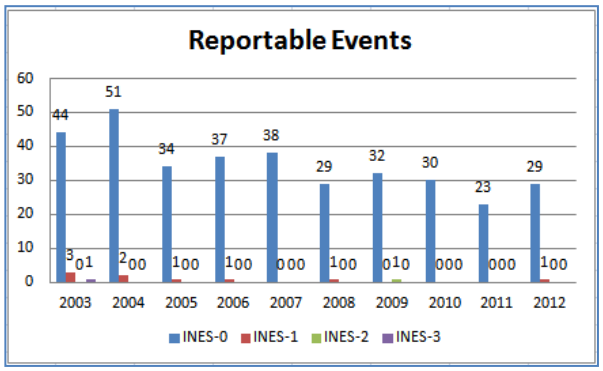
Paks NPP Safety Performance Assessment 2012

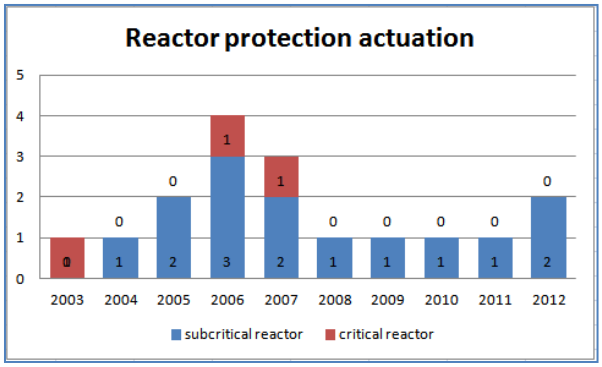
HAEA continuously evaluates the safety performance of the operators of the nuclear facilities. The main sources of data supporting the assessment are the regular and the event reports of the licensees, the protocols of regular and comprehensive regulatory inspections focusing on certain specific areas, reactive inspections and inspections of the training of operating personnel.



In 2012 there was only a single event where a technical specification limit was formally violated at Paks NPP, due to omission of issuing an operational instruction which is prescribed by the Tech Spec in a certain situation.

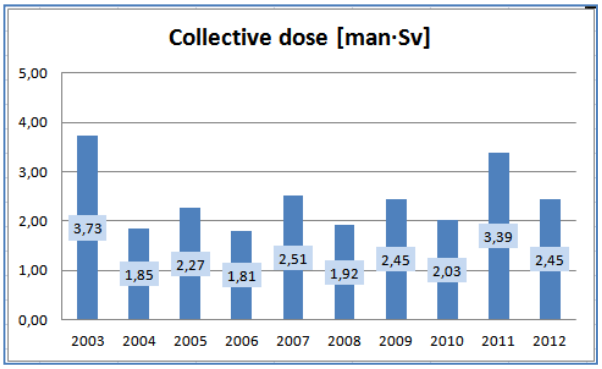
The number of the reportable events remained close to the preceding four year's average level. One event has reached the INES-1 classification on the seven-stage International Nuclear Event Scale. This event was the same which was mentioned in the previous Tech Spec violation paragraph.





There were two automatic reactor protection (RP) actuations, both happened in subcritical state of the reactor. At Unit 2 of PAks NPP an RP signal occurred because of a spurious "reactor period <10 seconds" signal. At Unit 3 loss off power on two trains of Reactor Protection System actuated the reactor protection during search for an earthing fault.

The collective dose was 2.45 man·Sv which is close to the average level of the recent years' values; except the previous year which was somewhat projecting due to some extra works carried out during outage.



The Budapest Research Reactor, the Training Reactor and the Spent Fuel Interim Storage Facility operated in accordance with the parameters specified in the operating and licensing documents.

As a summary, the general evaluation of nuclear safety condition of nuclear facilities showed acceptable and stable safety performance results in 2012.

The deficiencies revealed during the authority inspections did not jeopardize significantly the nuclear safety and the environmental releases nowhere exceeded or even approached the limit values.

HAEA internal

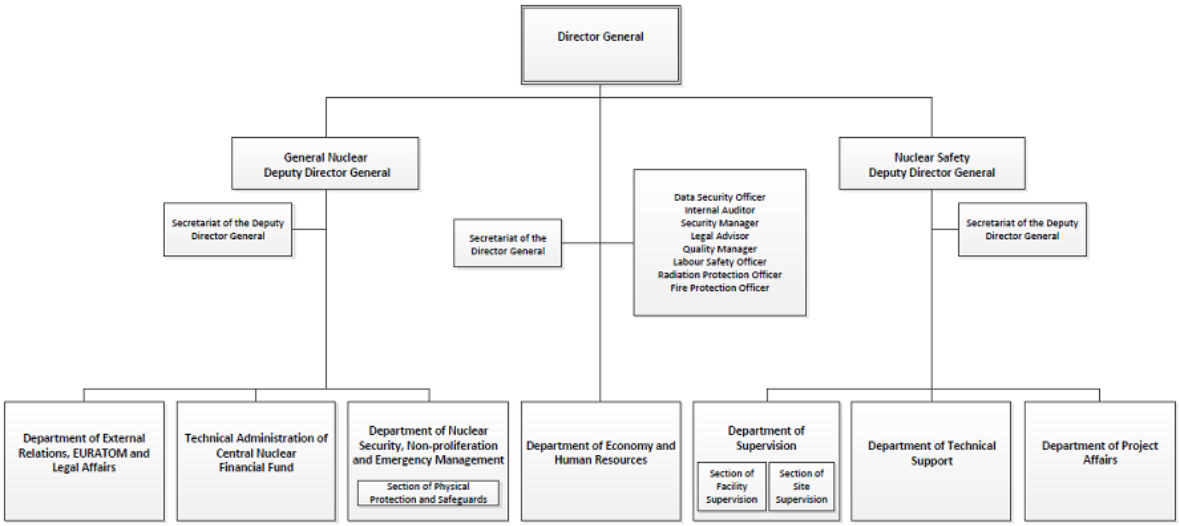
1. Organizational Changes at HAEA

By obeying the Governmental Resolution 1007/2013. (I. 10.) on transformation of the state administration system – the required organisational changes have been realized at the Hungarian Atomic Energy Authority. The Resolution requires that percentage of manager positions at every governmental organization shall be below 10%.

Accordingly, since February 1, 2013, HAEA has been operating in a new organisational structure with fewer sections and departments than before. Changes have affected both earlier directorates (General Nuclear Directorate and Nuclear Safety Directorate) and the

departments operating directly under the Director General, as well. Departments have been joined and sections have been eliminated because of the ruling. The new names of the previous directorates are Departments under the General Nuclear Deputy Director General (DGN DDG) and Departments under the Nuclear Safety Deputy Director General (DNS DDG).

The HAEA has submitted its new Organizational and Operational Rules to the Minister of National Development for approval. In the light of the new organisational structure the internal regulations will be adjusted by 31 of March.



The new organizational scheme of HAEA

Personal changes also took place at the HAEA due to transition to the new structure. Dr. József Rónaky, Director General of HAEA, has appointed Dr. Árpád Vincze as head of Department of Nuclear Security, Non-proliferation and Emergency Management under the General Nuclear Deputy Director General, Mr. Gábor Petőfi as head of Department of Technical Support and Mr. Mihály Lehota as head of Department of Project Affairs under the Nuclear Safety Deputy Director General.

Árpád Vincze

Gábor Petőfi

Mihály Lehota

Mr. Zoltán Lengyel and Mr. Szabocs Hullán remained department heads, but the scope of tasks and names of their departments have changed: Department of External Relations, EURATOM and Legal Affairs and Department of Supervision, respectively.

2. Standardization activity at the HAEA

With the contribution of HAEA, the National Standardization Technical Commission on Nuclear Energy was established on May 27th 2010. The chairman of the commission is Mihály Lehota, as HAEA representative. The main goal of this commission is to adopt internationally accepted standards in relation to nuclear energy and integrate them into the Hungarian system of standards. The commission specifically deals with the standardisation concerning the design, construction, operation and inspection of the nuclear power plants. The main tasks of the commission are to:

- define the objects of standardisation,
- propose standards for adopting,
- co-operate with the stakeholders for commenting the proposals,
- approval and release of the standard as integrated to the Hungarian system of standards.

Present members of the comitte are the representatives of the Hungarian Atomic Energy Authority, the Hungarian Nuclear Forum, the Ministry of National Development, the MVM Paks Nuclear Power Plant, the Hungarian Chamber of Engineers, the National Food Chain Safety Office, the PÖYRY ERÕTERV Co., the MVM Paks II. NPP Developing Co.

During the recent works, various international standards (ISO, IEC, ETSI, etc.) related to nuclear energy were investigated for adoption. The publication sequence of standards was determined. The first 46 standards are already published. These standards were issued in English with a so called „comment of approval" in Hungarian. The release of ASME III., ASME XI. and ASME OM Code in Hungarian is underway with the contribution of National Standardisation Commission on Nuclear Energy.

3. Renewal of TSO agreements

The HAEA is building its Technical Support Organization (TSO) background since the late '90s. Today the technical support background of HAEA is stable and extensive that HAEA can rely on it in a wide range of technical regulatory tasks. All of our TSOs have stable and reliable expertise on their specific fields.

HAEA maintains close relationship with its main TSOs by involving them not only in technical issues but financing different R&D activities related to nuclear safety. HAEA encourages its TSOs to suggest and carry out longer term R&D activities and establish 3-4 years programs

in the field of nuclear safety. The long term programs are advantageous also for the TSOs because they can plan their activities on the long term not only from financial but also from knowledge preservation and development point of view.

The HAEA organizes regular seminars for its TSOs to feed back their results of the different regulatory technical issues and R&D activities. These seminars offer good opportunity for HAEA to meet the experts of the TSOs face to face and for the TSOs to get direct contact with the experts of the authority.

In the framework of TSO support activities, HAEA signed TSO agreements in the recent years with numerous main TSO partners. The aim of these agreements is to provide immediate and free of charge support to HAEA in case of urgent regulatory technical tasks. In turn, HAEA undertakes to provide regular research contracts for the TSOs, to support their experts maintaining their knowledge level as high as possible.

Agreement signed by dr Ákos Horváth, DG of Centre for Energy Research and dr József Rónaky, DG of HAEA

The confirmation and review of the earlier TSO agreements arose first in 2012 after facing new regulatory tasks which had previously not been covered in the former versions of the agreements. Such tasks are, for example, the preparation for the construction of new units in Hungary and the service-life extension of the existing units of Pask NPP. After the organizational modifications that have taken place in HAEA the scope of TSO agreements

became wider and more complex, covering not only nuclear safety, but safeguards and physical protection issues, too.

The confirmation of the TSO agreements started this year with the Hungarian Meteorological Service. This agreement aims partly at data supply in case of a nuclear or radiological emergency to the HAEA emergency response organization and at making a meteorological expert available for the organization during the emergency response activities. The next in the row was the agreement with the Centre for Energy Research of the Hungarian Academy of Science, which is the largest TSO partner to HAEA. The new agreement, which has extended the cooperation between the organizations, was signed on April 11, 2013 in the HAEA by the two director-generals.

Paks Nuclear Power Plant

1. Severe accident management measures at the Paks NPP

More than ten years ago at Paks Nuclear Power Plant a system of Emergency Operating Procedures (EOPs) were introduced that was based on the results of the level-1 PSA analyses (yielding frequencies of the processes leading to core melt).

The design basis of the NPP had not extended to the treatment of severe accident processes, and following the international trends, the development of severe accident management guidelines (SAMGs) started in 2005, based on the results of level-2 PSA (yielding frequencies of different radioactive release categories due to processes outside the design basis). Both EOPs and SAMGs utilise the internationally widespread Westinghouse methodologies which were elaborated after the severe accident at TMI-2 in 1979. The main idea of this methodology is that in a situation of design basis transient/accident or a severe

Water-lock (U-profile) of the ex-vessel cooling system.
(from Paks NPP education material)

Hydrogen recombiners
(from Paks NPP education material)

accident the personnel has to make optimum measures to treat the most important symptom instead of seeking for the real causes of the processes (symptom-based instead of event-based approach).

Mobile diesel generator
(from Paks NPP education material)

Since the original design basis of the NPP did not contain severe accident managing measures, the introduction of SAMGs was not possible without modifications of the plant systems.

At Paks NPP the following modifications became necessary:

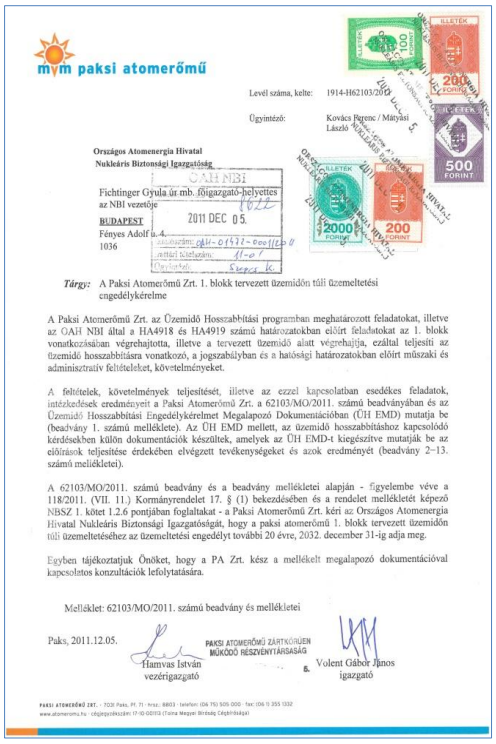
- External cooling of the reactor vessel for in-vessel retention of the molten core,
- Installation of H-recombiners capable of handling the hydrogen even in case of a severe accident,
- Upgrading the cooling system of the spent fuel pond,
- Autonomous power supply for the pressurizer safety valves to ensure pressure relief in any case, by mobile diesel generators,
- Upgrading the confinement spray system,
- Installation of severe accident measurement system,
- Guidelines for the non-failured units,
- Establishing a Technical Support Centre,
- Long term cooling of the confinement,
- Development of SAMGs.

A detailed schedule of the modifications and the introduction of SAMGs, along with the technical concept of related modifications were reviewed and approved by the Hungarian Atomic Energy Authority. It was a general regulatory requirement that lifetime extensions of the units may only be allowable if the SAMG and the biggest part of related modifications are implemented. It has been achieved so far at Units 1 and 2 and the other units are to follow.

2. Operational license extended for further 20 years to Paks NPP Unit 1

Original design lifetime of Paks NPP Units 1 to 4 was 30 years. Unit 1 was connected the first time to the national electric grid on December 28th 1982, so this date is the beginning of the design lifetime for Unit 1.

In 2001 the general assembly of the Paks NPP Inc. has made a decision on the extension of the lifetime of the NPP units by 20 years.



mvm paksi atomerőmű

Országos Atomenergia Hivatal
Nukleáris Biztonsági Igazgatóság

Fichtinger Gyula úr mb. főigazgató-helyettes
az NBI vezetője

BUDAPEST
Fényes Adolf u. 4.
1036

2011 DEC 05.

Tárgy: A Paksi Atomerőmű Zrt. 1. blokk tervezett üzemidőn túli üzemeltetési engedélykérelme

A Paksi Atomerőmű Zrt. az Üzemidő Hosszabbítási programban meghatározott feladatokat, illetve az OAH NBI által a HA4918 és HA4919 számú határozatokban előírt feladatokat az 1. blokk vonatkozásában végrehajtotta, illetve a tervezett üzemidő alatt végrehajtja, ezáltal teljesíti az üzemidő hosszabbításra vonatkozó, a jogszabályban és a hatósági határozatokban előírt műszaki és adminisztratív feltételeket, követelményeket.

A feltételek, követelmények teljesítését, illetve az ezzel kapcsolatban esedékes feladatok, intézkedések eredményeit a Paksi Atomerőmű Zrt. a 62103/MO/2011. számú beadványában és az Üzemidő Hosszabbítási Engedélykérelmet Megalapozó Dokumentációban (ÜH EMD) mutatja be (beadvány 1. számú melléklete). Az ÜH EMD mellett, az üzemidő hosszabbításhoz kapcsolódó kérdésekben külön dokumentációk készültek, amelyek az ÜH EMD-t kiegészítve mutatják be az előírások teljesítése érdekében elvégzett tevékenységeket és azok eredményét (beadvány 2–13. számú mellékletei).

A 62103/MO/2011. számú beadvány és a beadvány mellékletei alapján - figyelembe véve a 118/2011. (VII. 11.) Kormányrendelet 17. § (1) bekezdésében és a rendelet mellékletét képező NBSZ 1. kötet 1.2.6 pontjában foglaltakat - a Paksi Atomerőmű Zrt. kéri az Országos Atomenergia Hivatal Nukleáris Biztonsági Igazgatóságát, hogy a paksi atomerőmű 1. blokk tervezett üzemidőn túli üzemeltetéséhez az üzemeltetési engedélyt további 20 évre, 2032. december 31-ig adja meg.

Egyben tájékoztatjuk Önöket, hogy a PA Zrt. kész a mellékelt megalapozó dokumentációval kapcsolatos konzultációk lefolytatására.

Melléklet: 62103/MO/2011. számú beadvány és mellékletei

Paks, 2011.12.05.

Hamvas István
vezérigazgató

PAKSI ATOMERŐMŰ ZÁRTKÖRŰEN MŰKÖDŐ RÉSZVÉNYTÁRSASÁG

Volent Gábor János
igazgató

Application for lifetime extension of Paks NPP Unit 1

According to the legal requirements in November 2008 Paks NPP submitted to the HAEA the program of the measures to reach the necessary conditions for the lifetime extension.

In the HAEA decision of June 19th, 2009 HAEA stated that the program is suitable for ensuring the conditions of the prolonged operation provided that Paks NPP executes the program within the time limit provided for in the decision.

In December 2011, the NPP has submitted the application for 20 years lifetime extension for the NPP Unit 1.

According to the legal provisions applicable in the case of NPP Units the lifetime extension has been granted by new operational licence.

According to the law of regulatory procedures and administrative services, the administrative procedure shall be six months, in which certain procedural acts do not count, such as the duration of the auxiliary authority process, the time necessary to clarify the facts of the communication of the data, and the time required to complete the application. Therefore a whole year was required for the regulatory review and approval process.

According to the prevailing regulations each property owner in nuclear power plant safety zone is considered to be a client in the procedure.

At the request of the Greenpeace Hungary Association, HAEA acknowledged the Association's client status in the context of the environmental issues of the process and informed the Association on the current situation of the procedure.

At the request of the Energy Club Institute of Policy and Methodological Centre, HAEA provided information on the state of the procedure, and answered questions on several occasions.

In February 2012 HAEA called on the Paks NPP Inc. for completion of submitted documents. During the regulatory review and assessment of the completed documentation from May to October 2012 HAEA several times asked further oral explanations from the representatives

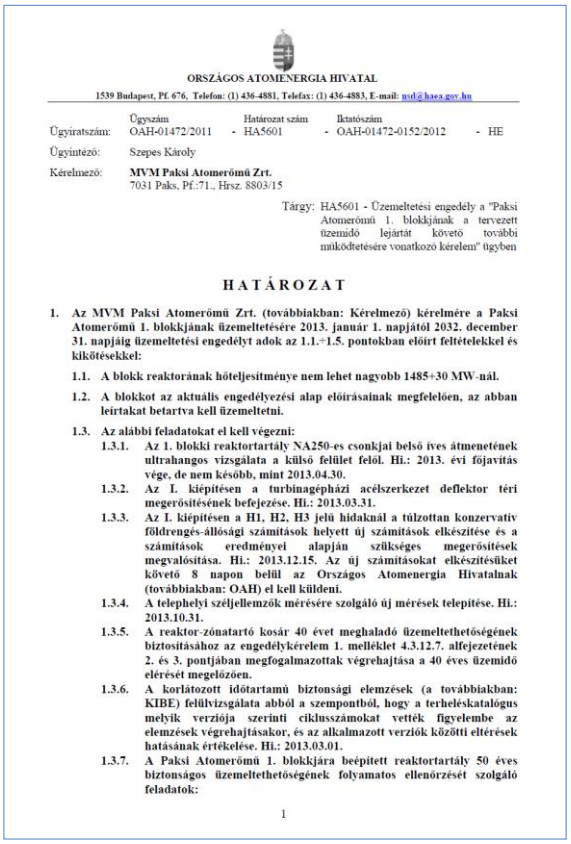
of the nuclear power plant in order to clarify the facts and circumstances required for the official decision.

Public hearing

In accordance with the applicable legislation, HAEA held a public hearing in the Hall of the Mayor's Office in Paks in October 4th, 2012. The Environmental Inspectorate of the South-transdanubian Region took part in the procedure as an auxiliary authority and in addition to the imposition of conditions gave its assent to granting the licence.

HAEA has carried out systematic inspections during the preceding three years on the underlying and supporting activities of the NPP Unit 1 lifetime extension. These oversight activities has created the possibility for the HAEA, to make responsible and informed decision within the time limit set.

The documentation of more than 30,000 pages submitted for review and assessment required a significant part of the working capacity of the HAEA staff. As a result of the procedure, HAEA concluded that Paks NPP has completed the accepted programme, to satisfy the conditions necessary for the lifetime extension. According to the results of the regulatory review and assessment the Unit 1 can be operated safely, and the required technical and administrative conditions are also provided to maintain this state by the end of the extended lifetime.



ORSZÁGOS ATOMENERGIA HIVATAL

1539 Budapest, Pf. 676, Telefon: (1) 436-4881, Telefax: (1) 436-4883, E-mail: ngd@haea.gov.hu

Ügyiratszám:	Ügyszám OAH-01472/2011	Határozat szám - HA5601	Iktatószám - OAH-01472-0152/2012	- HE

Ügyintéző: Szepes Károly

Kérelmező: **MVM Paksi Atomerőmű Zrt.**
7031 Paks, Pf.:71., Hrsz. 8803/15

Tárgy: HA5601 - Üzemeltetési engedély a "Paksi Atomerőmű 1. blokkjának a tervezett üzemidő lejártát követő további működtetésére vonatkozó kérelem" ügyben

HATÁROZAT

1. **Az MVM Paksi Atomerőmű Zrt. (továbbiakban: Kérelmező) kérelmére a Paksi Atomerőmű 1. blokkjának üzemeltetésére 2013. január 1. napjától 2032. december 31. napjáig üzemeltetési engedélyt adok az 1.1.÷1.5. pontokban előírt feltételekkel és kikötésekkel:**
   - 1.1. **A blokk reaktorának hőteljesítménye nem lehet nagyobb 1485+30 MW-nál.**
   - 1.2. **A blokkot az aktuális engedélyezési alap előírásainak megfelelően, az abban leírtakat betartva kell üzemeltetni.**
   - 1.3. **Az alábbi feladatokat el kell végezni:**
     - 1.3.1. **Az 1. blokki reaktortartály NA250-es csonkjai belső íves átmenetének ultrahangos vizsgálata a külső felület felől. Hi.: 2013. évi főjavítás vége, de nem később, mint 2013.04.30.**
     - 1.3.2. **Az I. kiépítésen a turbinagépházi acélszerkezet deflektor téri megerősítésének befejezése. Hi.: 2013.03.31.**
     - 1.3.3. **Az I. kiépítésen a H1, H2, H3 jelű hídaknál a túlzottan konzervatív földrengés-állósági számítások helyett új számítások elkészítése és a számítások eredményei alapján szükséges megerősítések megvalósítása. Hi.: 2013.12.15. Az új számításokat elkészítésüket követő 8 napon belül az Országos Atomenergia Hivatalnak (továbbiakban: OAH) el kell küldeni.**
     - 1.3.4. **A telephelyi széljellemzők mérésére szolgáló új mérések telepítése. Hi.: 2013.10.31.**
     - 1.3.5. **A reaktor-zónatartó kosár 40 évet meghaladó üzemeltethetőségének biztosításához az engedélykérelem 1. melléklet 4.3.12.7. alfejezetének 2. és 3. pontjában megfogalmazottak végrehajtása a 40 éves üzemidő elérését megelőzően.**
     - 1.3.6. **A korlátozott időtartamú biztonsági elemzések (a továbbiakban: KIBE) felülvizsgálata abból a szempontból, hogy a terheléskatalógus melyik verziója szerinti ciklusszámokat vették figyelembe az elemzések végrehajtásakor, és az alkalmazott verziók közötti eltérések hatásának értékelése. Hi.: 2013.03.01.**
     - 1.3.7. **A Paksi Atomerőmű 1. blokkjára beépített reaktortartály 50 éves biztonságos üzemelthetőségének folyamatos ellenőrzését szolgáló feladatok:**

1

License of lifetime extension for Paks NPP Unit 1

The authorisation is in force until December 31st, 2032. HAEA has issued the authorization with additional conditions which emerged in the course of the authorization procedure. These conditions are related to some revealed deviations which did not exclude the licensing, execution of the ongoing tasks, and the continuous monitoring of the safe operation for 50 years.

In accordance with the legal provisions the license include the list of event types to be reported to HAEA.

The authorisation procedure did not cover the implementation of actions which came up as a result of the European NPP Stress Test, HAEA has issued a separate decision on these on those issues.

Other Nuclear Installations

1. The Periodic Safety Review (PSR) of the Budapest Research Reactor (BRR) has begun

According to the Hungarian Atomic Energy Act, the Licensee and the nuclear safety regulator shall carry out in regular intervals a full scope review and assessment of the nuclear safety of the nuclear installation, covering the status of fulfillment of nuclear safety requirements, the level of risks, taking into account the operational experience and the new knowledge related to nuclear safety. This process is called as Periodic Safety Review (PSR).

The Hungarian Academy of Sciences Centre for Energy Research (HAS CER) has carried out the review of BRR on deadline. The results are documented in the PSR Report according to requirements of the Governmental Decree on the nuclear safety requirements of nuclear installations and on the relevant regulatory activities. According to the legal requirements, the PSR process shall be carried out in ten years intervals for every nuclear installation. HAEA closes the process with a decision, which must be issued within 10 years after the issuance of the decision closing the former PSR. The HAS CER has submitted the PSR Report to the authority, applying for a 10 year long operational licence renewal. HAEA NSD has started the review and assessment process of the PSR Report in order to justify the submitted licence application according to schedule, in cooperation with the auxiliary authorities.

2. Licensing of Interim Spent Fuel Store's extension at Paks is underway

The construction and commissioning of new vaults of the modular Interim Spent Fuel Storage Facility for storing the spent fuels of Paks NPP is carried out according to the pace of production of spent fuel at Paks NPP. The design of the facility includes the construction of 33 vaults in total. After the commissioning of 16 chambers having been built until 2007 in two stages, the extension continued with the construction of four more vaults. Each of the new vaults 17-20 unlike the older chambers which are being capable to host 450 assemblies --, are able to host 527 assemblies. The four new vaults became available for commissioning by the mid of 2012. The system level tests carried out under inactive circumstances and

according to Commissioning Work Programmes as approved by HAEA have proven the suitability of the new vaults. The HAEA approved the licence application of active commissioning, which made possible the test operation of the facility extension. Within the framework of the test operation, with charging of spent fuel assemblies delivered out from Paks NPP, the filling in of vault 17 has begun. HAEA oversighted the test operation at the site.

The PURAM Ltd., using the experience of the commissioning and the test operation, arranged the documentation having the content according to the legislative requirements and submitted it to HAEA in order to receiving final operational licence. The HAEA reviews the licence application with the contribution of invited relevant auxiliary authorities. The goal of the process is the issuance of a unified licence to operate the chambers 1-20.

International co-operation

European Stress Tests of the Nuclear Power Plants

After the completion of the international peer review of the national reports in the spring of 2012, the Council of the European Union has not closed the stress tests process of the EU NPPs but declared the intent to monitor the execution of the corrective actions which were decided on the basis of the reassessment results. On September 4-5, 2012 during the meeting of ENSREG (European Nuclear Safety Regulators Group) – the advisory body to the European Commission – a decision was made for the countries with NPPs to elaborate a National Action Plan (NAcP) and send it to the European Commission by the end of 2012. In the National Action Plans the countries describe the decided actions and their deadlines. They also had to include the measures reflecting to the issues revealed during the 2nd Extraordinary Review Meeting of the Convention on Nuclear Safety (CNS) held in August 2012.

The ENSREG gave guidelines and recommendations to the preparation of the action plans („Compilation of recommendations and suggestions Peer review of stress tests performed on European nuclear power plants" and „National Action Plan (NAcP) Guidance as directed within the ENSREG Stress test Action Plan"). The structure and contents of the Hungarian National Action Plan follows closely these recommendations, as follows:

The Introduction describes the preliminaries in general, the structure of the NAcP and the regulatory tasks relating to the execution of the corrective actions.

In Part I -- following the ENSREG recommendations –, consisting of Chapters 1 through 3, the action plan explains the measures decided in the topics of

- external events,
- design issues,
- severe accident management and recovery.

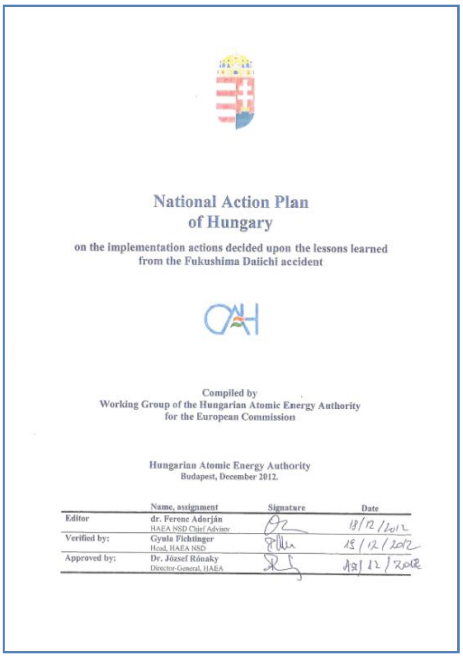
Apart from the short description of the measures, this document does not contain detailed explanation of the measures, because the description and rationale of the measures were included in the national Stress Test Report and it is available to the public.

The Part II of the plan contains those planned actionsand measures as necessary which respond to findings revealed during the 2nd Extraordinary Review Meeting of the Convention on Nuclear Safety (CNS) in Vienna, August 2012. (Hungary submitted its Extraordinary National Report to the Convention in accordance with the requested deadline prior to the review meeting.) The main topics of the Extraordinary Review Meeting – in addition to the ENSREG review topics were:

- National organizations,
- Emergency Preparedness and Response,
- International Cooperation.

In the Part III, according to the recommendations, should be explained any measures not discussed in the previous chapters, or could not be classified into the previous topics. The review did not reveal any such measure therefore the Part III remained empty.

Part IV presents all the actions in tabular form which were discussed in the first three Parts in textual form, along with the deadlines, references to the National Report and to the ENSREG Report chapters.



National Action Plan
of Hungary

on the implementation actions decided upon the lessons learned from the Fukushima Daiichi accident

Compiled by
Working Group of the Hungarian Atomic Energy Authority for the European Commission

Hungarian Atomic Energy Authority
Budapest, December 2012.

	Name, assignment	Signature	Date
Editor	dr. Ferenc Adorján HAEA NSD Chief Advisor		18/12/2012
Verified by:	Gyula Fichtinger Head, HAEA NSD		18/12/2012
Approved by:	Dr. József Rónaky Director General, HAEA		18/12/2012

Altogether 51 actions are scheduled in the National Action Plan (four out of these completed in 2012). In the related decision issued by the regulator 46 obligations were ordered to carry out by the Paks NPP (modifications and analyses). Most of these relate to severe accident management and mitigation. Typical examples for these actions are: elaborating a severe accident simulator or engineering solution against overpressurization of the hermetic compartments. Some measures schedule further investigations, such as re-evaluation of soil liquefaction effects.

The Hungarian National Action Plan is based partly on the earlier regulatory decision on the NPP licence holder's proposal of his own action-plan activities and partly the activities to be performed by the regulator.

Regulatory tasks

The regulatory body performs the following tasks on the basis of the Fukushima accident's experiences:

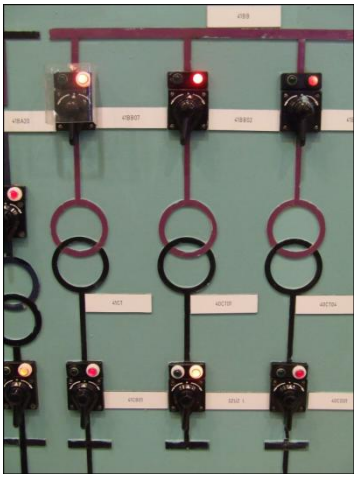
a) Revision of the Stress Test action plan submitted by the licensee, supplementing as deemed necessary, harmonisation, prescription of its execution.
b) Regulatory supervision of the ordered action plan, following up the fulfilment of the action plan
c) Preparation of draft for revision of the nuclear safety legislations, taking into account the binding requirements (EU directives) and recommendations (WENRA, IAEA) and the results of the review of the national legislations.
d) Participation in the international processing of experiences (IAEA and ENSREG action plan, OECD NEA).
e) Informing the public.

The action plan submitted by the licensee has been evaluated by the regulatory body according to the following questions:

- Is it coherent with the National Stress Test Report?
- Are all the revealed findings covered?
- Are the measures adequate and efficient to eliminate the findings?
- Are the formulated tasks unambiguous and executable?
- Is the timing of the tasks well-founded and is the safety risk acceptable up to the time of implementation?
- Is there a relation between the tasks and the planned activities of the Life-Time Extension or the Periodic Safety Review programmes (for assuring the coherence between the action plans)?

Event of Interest

Reactor scram due to an erroneous switchover



The unit 4 of Paks NPP operated on full power when on 03/02/2013 technicians of I&C Operation Section were preparing the 6 kV breaker of transformer (40CT01) for maintenance. To allow breaker isolation, the power supply of buses feeding the Control and Safety Rod Drive Mechanisms (CRDM) had to be transferred to transformer 40CT02. While executing the switching operation consisting of three steps according to the operating procedures in two switchboards, the personnel performed the third step erroneously. This led to automatic reactor scram due to loss of CRDM power supply. The protection actuation was completed as designed; and the personnel placed the unit in stable condition. The erroneous third switching was performed in the same switchboard as step one and two; however it should have been done on a different switchboard. Training, change of procedure and intensive manager review was identified to fix the root causes of the event: the poor pre-job briefing and misunderstanding of the action.

Switchboards affected by the event