European Nuclear Safety Regulators Group
ENSREG

2nd Topical Peer Review – 'Fire Protection'

Country Review Report

Netherlands

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CONTENTS

1. Brief overview of the candidate installations

The following installations were finally selected and included in the national assessment report (NAR).

Installation category	Number of installations	Name of candidate installations
Nuclear power plant	1	'Kerncentrale Borssele', Borssele Nuclear Power Plant (KCB)
Research reactor	2	High Flux Reactor (hereafter – HFR) Hoger Onderwijs Reactor (hereafter – HOR)
Fuel reprocessing facility		-
Fuel fabrication facility		-
Fuel enrichment facility	1	Uranium Enrichment Company (UNL)
Dedicated spent fuel storage *Note: please, indicate the type „wet" or „dry".*	1	HABOG (dry type)
Installations under decommissioning		-
On-site radioactive waste storage	1	High Flux Reactor Waste Storage Facility (hereafter – HFR WSF)
Total	**6**	

2. Regulatory framework

The NAR mentions that "*Depending on the type of installation, when deemed necessary, specific nuclear (fire) safety related requirements are listed in the individual licences, tailored to the particular characteristics, and based on a graded approach*."

The NAR provides a list as well of "*National non-nuclear Acts and Decrees relevant for fire safety*" and National nuclear guidelines. In particular, the "*Dutch Safety Requirements guide apply to facilities where fission of nuclear fuels takes plac*e. *Although the DSR guide is not a ministerial regulation, and therefore does not contain any legal requirements, the assessment of a licence application takes place on the basis of the safety preconditions of it. These specific preconditions are in line with the current insights of, in particular, the International Atomic Energy Agency (IAEA) and the Western European Nuclear Regulators Association (WENRA). They can, where applicable and necessary, serve as the basis for the licensing requirements for new reactors*."

The NAR does not clearly state if the WENRA SRLs are binding. In response to the question of the TPR team[1], Netherland's answer was "*The WENRA SRLs are formally not binding. Together with different IAEA guidelines, they are used as a references. The ANVS is currently developing an implementation*

[1] 'The NAR in §1.2 presents the regulatory framework. If not yet clearly mentioned in the NAR, could you indicate whether the WENRA SRLs for NPPs, and RRs (if relevant for your country), which are used as reference for this topical peer review on 'fire protection' (as per the Technical specification) are binding or not in your country? If they are not binding, what is the status of the SRLs (non-binding, guidance, advisory..)?'

program called WIDOCS, where the IAEA and WENRA documents will be systematically considered and allocated, depending on the installation and the potential overlaps with the existing legal framework, as requirement in the individual licenses, or as guidelines for the regulatory oversight […] Additionally, a license revision was granted to the Borssele NPP in 2018, in order to include the remaining WENRA SRLs updated in 2014. Some requirements were graded based on the feasibility of implementation, and the consistency with the existing legal framework in The Netherlands. These are therefore legally binding."

The NAR indicates that "*In the Netherlands, it has been a long standing practice to apply IAEA Safety Standards in the regulation of nuclear installations. The IAEA Safety Standards are applied in conjunction with the WENRA Safety Reference Levels*".

The NAR mentions that "*nuclear installations have to demonstrate that they achieve the legally required safety standards. For this demonstration of compliance with the national legal framework, nuclear codes and standards of other countries are often used. Examples are the US Code of Federal Regulations, the US NRC Regulatory Guides, the US NRC Standard Review Plan, and the German RSK recommendations*."

3. Findings and significant improvements of approaches on the installations from the national self-assessment

Nuclear power plants

BORSSELE NPP (KCB)

The following **strengths** related to fire protection were reported in the NAR for **Borssele NPP (KCB)**:

- The internal procedures for maintenance, temporary works or special activities include a fire check by the internal fire brigade through a work permit system, and the company fire brigade performs checks on the workplace prior and during the work. The company internal fire brigade is involved in reviewing modifications that might impact fire safety.
- The use of the internal procedure for bringing fire loads into the plant with the involvement of the internal fire brigade.
- A great number of control rounds by various departments of the plant (Fire brigade, control room operators and engineers of the technical department, management and staff) is aimed at contributing to fire prevention.
- The fire safety department and its organization have been recently (2021) fully updated. The results of these updates are improvements of the organization, management and responsibility structures and fire safety has become a more important subject in relation to the nuclear safety.
- The KCB has developed procedures for the maintenance and improvement of all related fire protection aspects, covering from design modifications, to organization, and the certification of systems. All these measures are substantiated by the results of the Fire Safety Analyses.
- The FHA identifies various strengths of the fire safety of the KCB like:
    - The large number of automatic or semi-automatic extinguishing systems, water mist as well as sprinkler and gaseous systems;
    - The comprehensive fire detection system with a diverse range of detector types (smoke (optical/thermal), flame, aspiration, etc.). The detection system is certified according the Dutch standard NEN 2535:2009+C1:2010.
- The early development of both a full scope PSA including fire, and the Fire Hazard Analysis, and their continuous update and improvement.

The following **weaknesses** related to fire protection were reported in the NAR for **Borssele NPP (KCB)**:

- The operator is still in the process of getting its permanently installed automatic fire extinguishing installations certified.
- For several automatic extinguishing system, it is difficult to demonstrate that these earlier designs comply with the current design requirements and regulations.
- Given the operational lifetime of the KCB, not all the systems can be easily modified to accommodate the findings from the Fire Safety Analysis, inspections, lessons learned or the newest standards.
- The fire detection alarms are not simulated in the control room simulator.
- A potential weakness can be a lack of discipline to carry out the control rounds by the operating personnel.

The following **lessons learned** related to fire protection were reported in the NAR for **Borssele NPP (KCB)**:

- In the past decades, no significant fire related events occurred, and only minor events have been recorded. In most cases the events originated in spurious activation (alarm) of the detection system. The reason is a very sensitive adjustment of the detection system.
- As result of several inspections conducted by the 'Veiligheidsregio', the communication equipment of the fire brigade has been renewed to improve the communication in the plant, especially in the controlled area. Also, inspections by the regional Veiligheidsregio Zeeland (VRZ) and the ANVS in most cases resulted in some recommendations related to the operation of the onsite fire brigade, currently being implemented.
- Several peer reviews conducted by IAEA (e.g. OSART) and WANO resulted in several suggestions for improvement of fire safety mainly focused on the fire brigade organization.
- Significant reviews on fire safety by the insurance companies (EMANI and the Nuclear Insurance Pool). The main already implemented modifications related to this are:
    - Heat and smoke removal system in the roof of the turbine building;
    - Semi-automatic sprinkler systems for the turbine bearings;
    - Semi-automatic sprinkler systems for the main feed water pumps.
- In 2019, the ANVS in cooperation with the German TSO GRS, performed a fire safety inspection at the Borssele Nuclear Power Plant. The most important requested improvements after this inspection are:
    - Removal of plastic containers from the plant buildings (finished);
    - Improving the compartmentation of some electric rooms (ongoing);
    - Improving the compartmentation of the electric building by protecting a ventilation duct with fire resistant material (finished).
- An inspection (ANVS together with the German TSO GRS) recommended to consider the potential HEAF (High Energy Arcing Fault) events in the FHA and PSA, in particular for electrical rooms with medium of high voltage electrical cabinets. This activity is ongoing at the time of this NAR.
- An IAEA OSART mission in 2023 recognized a good performance in the Fire prevention and protection program: All rooms of the plant have been assessed for fire loading and baselined accordingly. During the preparation phase for planned work, all tasks were assessed against the fire loading criteria for the areas where tasks were to be performed. If the fire loading would increase as a result of the task, appropriate mitigating measures were documented in a fire permit and the measures identified implemented prior to the commencement of the task.

The following **improvements** related to fire protection were reported in the NAR for **Borssele NPP (KCB)**:

- The full scope Fire PSA was updated according to the NUREG-685020 and it is an integral part of the PSA.
- As part of the Periodic Safety Review 2023, the PSA was updated for the combinations of hazards to have a more understandable approach. No new combinations did arise from this update.
- Important measures, based on the FHA, have been implemented during the 10-yearly evaluations of 2003 and 2013:
    - Exchange of many fire dampers in the plant;
    - Replacing the Halon systems by Inergen gaseous extinguishing systems;
    - Replacing fire doors;
    - Smoke and heat removal system in the roof of the turbine building);
    - Extinguishing systems for coal filters of the nuclear ventilation system;
    - Making the high pressure extinguishing system earthquake resistant;
    - Purchasing of diverse mobile systems.
- As a result of the Seismic Margin Assessment, the plant was retrofitted with the possibility to connect a fire truck to seismic resistant fire lines to mitigate a fire in seismic relevant areas.

Research reactors

High Flux Reactor (HFR)

The following **strengths** related to fire protection were reported in the NAR for **High Flux Reactor**:

- A fire-fighting squad is present 24/7. This firefighting squad plays an active role in fire protection and is involved and reports on several related activities, such as internal audits, safety walkdowns, training given and checks performed on portable extinguishers, and is involved in reviewing modifications that might impact fire safety.
- The licensee has a work permit system which pays attention to fire safety. The firefighting squad performs checks on the work place prior and during the work.
- The licensee has a certified fire detection system.
- A full-scope PSA (levels 1, 2 and 3) accounting for internal hazards and external hazards, including fires.

The following **weaknesses** related to fire protection were reported in the NAR for **High Flux Reactor**:

- One weakness of the fire protection concept is that the reactor is not fully divided into fire compartments as a fire protection strategy. However, with the use of fire cells, an adequate level of protection is achieved.
- The location of the available fire-fighting equipment is currently not described in the LNP (Site Emergency Plan).
- The following lessons learned related to fire protection were reported in the NAR for High Flux Reactor:
- Integrated Safety Assessments of Research Reactors (INSARR) have been held in 2005, 2011 and 2016 with additional follow-up in 2019 to monitor the progress. Implemented measures are for example:
    - Development of administrative procedures to improve fire safety (an example is a procedure on combustible load control);
    - Update of fire hazard analysis;
    - Installation of extra fire detectors and fire doors.

- Based on the findings of the stress test, the Emergency Response Organization (BNO) was founded in 2016 and a cooperation agreement and the exercise program with the Safety region VR NHN was drafted.
- Nuclear Insurance Pool survey: About every 3-5 years an insurance survey is carried out with a focus on nuclear and fire safety. The last one was conducted in 2022. Proposed measures were among others:
    - Improve signage of fire hydrants;
    - Upgrading of fire door resistance;
    - Minimise fire loads.

The following **improvements** related to fire protection were reported in the NAR for **High Flux Reactor**:

- In 2012, several fire-related deficiencies were addressed and measures regarding fire prevention and early detection and fire-fighting were defined:
    - the use of burnable gasses;
    - standard regulations for the use of flammable liquids;
    - periodic checks for the presence of fire-extinguishing materials;
    - periodic checks of the central fire detectors, extinguishing pipes and small extinguishing agents;
    - reporting of the automatic and manual fire detectors to the central reporting station.
    - instructions for reporting a fire or accident;
    - reporting via the emergency number;
    - arrival time company fire brigade;
    - placement of portable and mobile fire-fighting equipment;
    - periodic check of the fire-fighting equipment;
    - fire-fighting plan and evacuation route.
- From 10-year evaluations, various improvement with regard to fire safety have been implemented or are in progress, such as:
    - Upgrade and replacement of the fire alarm and detection systems;
    - Complete renewal/renovation of the underground fire extinguishing piping system;
    - Large revision of the emergency preparedness and response organization, both central and local;
    - Modernization of HVAC of control room HFR;
    - Installation of automatic fire detection in the HFR reactor building and various other buildings;
    - Application of a fire proof sealant to all penetrations through the HFR control room floor from the cellars, to prevent smoke transport and fire propagation to the control room(s) in case of a fire in one of the cellars;
    - Replacement of non-fire retardant signal cables to the reactor protection (interlock) system by fire retardant ones;
    - Installation of a fire door between the two cooling water pumps;
    - Separation of decay heat removal pumps by a fireproof door (type F60, NEN 6069);
    - Implementation of a procedure to scram the reactor immediately after an automatic fire alarm in one of the cellars of the reactor outbuilding or in case of fire in the Primary pump building.

Hoger Onderwijs Reactor (HOR)

The following **strengths** related to fire protection were reported in the NAR for **Hoger Onderwijs Reactor**:

- Fire safety is regularly subject to both internal and external inspections, nuclear risk evaluation, generic fire safety measures, external auditing and control by CRE and RID/HOR.

- The development of a full scope PSA (levels 1, 2 and 3), and has been developed accounting for internal and external hazards, including fires. The HOR is one of the few nuclear facilities with limited power realizing a PSA, including a fire risk analyses. The contribution of the fire scenarios to the TCDF is very low.
- For experimental assemblies, no specific extinguisher equipment would be needed, due to the fact that the design of the installations are within the scope of the present provisions installed in the fire compartments/cells.
- The low power of the reactor allows it to remove the decay heat after a SCRAM by natural circulation of water in the reactor pool. In this sense, the reactor does not rely on any system that may be affected by fires to ensure heat removal (e.g. electric systems).

The following **weaknesses** related to fire protection were reported in the NAR for **Hoger Onderwijs Reactor**:

- Limited fire safety knowledge exchange between (relevant) nuclear facilities.
- Last complete revision of the licence was done in the year 1996, and the explicit requirements for fire safety were not developed in much detail.

The following **lessons learned** related to fire protection were reported in the NAR for **Hoger Onderwijs Reactor**:

- In 2013, a post- Fukushima stress test analysis was carried out, with a follow-up inspection in 2015. Some observations from this activity were:
    - Proposals for the overall improvement of fire safety in fire cells or fire compartments, considering risks of fires and explosions;
    - Analyze potential fire loads;
    - Verify the capacities of the fire brigade to counter the effects of calamities.
- Inspections by insurance company are performed every 5 years. Last recommendations and improvements for fire safety concerned the relocation of power equipment and removal of combustible material from the control room.
- The HOR is joining several international groups for improving safety and operation for research reactors.

The following **improvements** related to **fire protection** were reported in the NAR for **Hoger Onderwijs Reactor**:

- Removing fire loads.
- Testing of isolation material of the Reactor Hall on fire resistance.
- Closing cable penetrations with certified sealant.

Fuel enrichment facility

Uranium Enrichment Company

The following **strengths** related to fire protection were reported in the NAR for **Uranium Enrichment Company**:

- Fire Hazards Analyses and a (PSA level 3) risk assessment have been developed, accounting for internal hazards and external hazards, including fires.
- Urenco has similar installations in different countries, and these installations are all individually subjected to different national regulations and inspections. Experience and design improvements can be gathered and shared between operators of the various installations.
- The installation is subjected to several inspections by national organisations.
- It is unlikely that a fire in rooms with UF6 systems will lead to a discharge of UF6, due to the presence of a fire detection system and the limited fire load present.
- UNL has a rapid intervention at its disposal by the emergency response team.

The following **weaknesses** related to fire protection were reported in the NAR for **Uranium Enrichment Company**:

- Fires have been accounted for in different reports, mainly those about the Safety Analyses and Fire Hazard Analysis. These are elaborated following different requirements and guidelines. Analyses of different fire scenarios are described in several reports. These reports have been developed by different experts, and show no obvious connection, since scenarios differ. Moreover not all scenarios mentioned in UNL's Safety Report are considered in the Fire Hazards Analysis report, for instance ignition of accumulated hydrogen.
- Due to the fact that UNL has several fire stations on site with personal equipment, team members are not provided with their own equipment. Equipment is available in different sizes. Occasionally, team members are not provided with their own size.
- Due to the large buildings, most built up in concrete, walky-talky contact can be difficult.

The following **lessons learned** related to fire protection were reported in the NAR for **Uranium Enrichment Company**:

- In the past six years, there have been nine true fire alarms. Seven of these true fire alarms were caused by an electrical hazard and two by human activity.
- UNL is regularly audited by the fire insurance company 'Atoompool'.
- A quarterly report with external incidents is shared across the organisation. External incidents, for example incidents about fire, are collected from news websites and nuclear authorities, including the Fuel Incident Notification and Analysis System (FINAS) database.
- UNL stays informed of events taking place in the nuclear industry as well as other relevant incidents including fire incidents. If relevant, UNL considers whether measures are needed to prevent such an incident within UNL.

No **improvements** related to fire protection were reported in the NAR for **Uranium Enrichment Company**.

Spent fuel storages

HABOG

The following **strengths** related to fire protection were reported in the NAR for **HABOG**:

- The risk of an internal fire inside the storage areas is very small due to the very low amount of combustible inventory in HABOG. The areas where more combustible material is present are accommodated with fire detection systems.
- A Fire Hazards Analysis and a risk assessment have been developed. This assessment complies with the ANVS PSA level 3 guidelines, and several IAEA / WENRA guidelines.
- COVRA has a well-trained BHV staff, which works closely with the regional fire brigade VR Zeeland, sometimes including members of other regional fire brigades as well, in order to maintain knowledge and awareness of the characteristics of the site. Emergency preparedness exercises are carried out on a yearly basis.
- COVRA performs regular safety walks (werkplekinspecties) at the COVRA site. Every year the HABOG is subject to these safety walks in which the fire protection systems are also inspected.
- The installation is subjected to several inspections by national organisations. On the national level this is done by e.g. the ANVS and the regional Safety Region (VR) fire brigade. In a separate contractual framework, the company insuring the licensee's facility audits the installation and provides advice on the improvement of the fire protection systems.

No **weaknesses** related to fire protection were reported in the NAR for **HABOG**.

The following **lessons learned** related to fire protection were reported in the NAR for **HABOG**:

- COVRA (the licensee of HABOG) is regularly audited by the insurance company ('Nederlandse Atoompool'), usually every 5 years. The last inspection was carried out in September 2023. Their suggestions will be considered in a plan of approach for improvement.
- In the year 2013, following the Fukushima accident, COVRA carried out a Stress Test assessment. In relation to fire safety, it was observed that:
    - Regarding internal fire protection several measures are in place: sound and visual alarms in the control rooms; fire compartments; portable extinguishers;
    - Potential explosion scenarios are explosion of diesel inventory and hydrogen explosion and their mitigation;
    - The risk of an external fire results from the main gas pipeline; neighboring companies; transport via the rail road; transport via the road Europaweg-Zuid and the Coal Storage.
- After an inspection carried out in 2022, it was found that the updated versions of the corporate emergency plan, incident and accident regulation, and the exercise program of its corporate emergency organization were not shared with the ANVS, and therefore not reviewed. As a result, the administrative obligations from the licence were not sufficiently in view. Due to supervision by the ANVS, COVRA now has improvement plans in place. The implementation of these improvements are ongoing.

No **improvements** related to fire protection were reported in the NAR for **HABOG**.

On-site radioactive waste storage facilities

High Flux Reactor Waste Storage Facility

The following **strength** related to fire protection was reported in the NAR for **High Flux Reactor Waste Storage Facility**:

- Waste is well protected from fire due to storage design, low access of air to sustain a fire in radioactive matter, even with high amounts of waste.

No **weaknesses**, **lessons learned** and **improvements** related to fire protection were reported in the NAR for **High Flux Reactor Waste Storage Facility**.

4. Peer-review conclusions

4.1 Attributes of the NAR and the information provided

The candidate installations are similar to those which were the subject of the Board's review prior to the national self-assessment. The recommendation of the Board (consideration of on-site waste storage) was addressed in the NAR.

The information provided in the NAR allowed a meaningful peer review in particular, for the identification of peer review findings.

The document was reader-friendly and facilitated the finding of relevant information.

The outcomes of the self-assessment appropriately mentioned the findings, which were well-illustrated and clearly described.

Adequate information was provided in reply to the written questions.

Additional information and updates provided in reply to written questions, the site visit, and in the national presentation in the country review workshop were taken into account in the definition of the findings below in section 4.3.

4.2 Conclusions from the site visit

The site visit at the Hoger Onderwijs Reactor took place on 9 July 2024.

The visit was conducted according to the preliminarily agreed agenda, also highlighting the main questions and requests for clarification posed by the TPR II team.

In particular, the following topics were discussed: Past fire event at the Faculty of Architecture of the TU Delft Institute; fire protection strategies based on isolation of the containment without extinguishing the fire, protection outside normal working hours, arrangements specific to experiments, applicability of fire protection strategy in case of external events (earthquake, aircraft crash etc), including firefighting procedures, fire suppression means in control room; Control and minimisation of ignition sources and combustible materials; Firefighting strategy (respective roles of on-site and off-site fire brigades, criteria for off-site brigade activation, management of events outside working hours, availability of response organisations in case of external events); Challenges and results of PSA and consequent measures; Management of ventilation (isolation, etc.) in case of fire.

In order to answer questions and requests of clarifications, ANVS and RID provided some well-structured and informative presentations, which offered, together with answers provided to questions posed during the discussion, the opportunity to clarify all the points raised by the TPR II team as per the visit agenda.

During the visit a walk down was conducted in the reactor hall, in the main control room with associated rooms, in the premises of the hydrogen moderator storage cell, and in a new building, connected to the reactor containment, which is hosting a new cold neutron source related equipment.

As result of the conducted site visit, taking into account the provided presentations as well as the undertaken discussions and observations of the site walk down the following points were highlighted by the TPR II team:

- a well-structured program is in place to promote and strengthen safety culture at the different levels of the HOR reactor organisation.
- the conducted full Level 1, 2 and 3 PSA, including a FHA, is unique for a research reactor.
- it is possible to introduce some improvements in the following areas:
    - Fire detection in the reactor building (e.g. installation of additional fire detectors outside the ventilation ducts);
    - Management and qualification of containment isolation valves in the reactor building;
    - Fire resistance compartmentation of the control room;
    - Management of fire loads in the reactor building and in rooms adjacent to control room;
    - Management of fire-fighting organisation in place during weekends and holidays: external firefighters are called by security guards of the site but have to wait for the licensee to enter in certain parts of the building: it results in longer response time for firefighting.

The TPR II team expressed its appreciation for the willingness and cooperation of the Netherlands to host site visit to Hoger Onderwijs Reactor.

4.3 Peer review findings

The self-assessment revealed some weaknesses in the fire protection of the nuclear installations. The findings in the table below were acknowledged as areas for improvement by the TPR Team:

Areas For Improvement mentioned in the NAR as weaknesses and acknowledged as such by the TPR Team	
Nuclear installation: Borssele NPP	
AFI (1)	Several automatic extinguishing systems do not fully comply with the current design requirements and regulations.
AFI (2)	The fire detection alarms are not simulated in the control room simulator.
Nuclear installation: FCF Urenco	
AFI (3)	No obvious connection between the diverse fire analyses performed with different requirements, guidelines and scenarios depending on the fire analyses.

The TPR team recommends that the Netherlands addresses these areas for improvement in the National Action plan.

During the country review workshop, the findings identified during the peer review phase were discussed. Based on these discussions, the TPR team concluded on the following findings:

Areas of Improvement		
Nuclear installation: Borssele NPP		
AFI (4)	**Finding**	Automatic fire suppression is not guaranteed in case of SSE.
	Justification	The high-pressure pump system for water supply to the fire protection system is not seismically qualified. It does not allow to cope with seismically induced fires.
Nuclear installation: Hoger Onderwijs Reactor (HOR)		
AFI (5)	**Finding**	Inadequate management and qualification of isolation valves in the reactor building.
	Justification	Two sets of containment isolation valves (inlet and outlet) also provide the isolation of the reactor building in case of fire. The fire-resistance of the isolation valves is not known; therefore the fire compartmentation is not guaranteed during 60 minutes as for the rest of the reactor building fire compartment.
AFI (6)	**Finding**	In the reactor building fire detectors are located only in the ventilation ducts.
	Justification	While this should allow a timely detection in most scenarios, the fire detection would be disabled/ineffective if the reactor building ventilation is stopped or isolated. The current fire detection inside the reactor building does moreover neither allow identifying more precisely the origin nor the spread of fires inside the reactor building.

The TPR team recommends that the Netherlands addresses these areas for improvement in the National Action plan.

Areas of Good performance		
Nuclear installation: Borssele NPP and High Flux Reactor (HFR)		
AGP (1)	**Finding**	Full-scope fire PSA in all operational states for Level 1 to 3 PSA.
	Justification	PSA Level 3 enables to quantify the impact of radiological releases due to fire events on the environment and the public.
Nuclear installation: High Flux Reactor (HFR)		
AGP (2)	**Finding**	A systematic approach for combination of hazards is applied.
	Justification	A systematic approach for combination of hazards is applied, based on a guidance developed for NPPs and adapted for HFR.

Definition of the types of findings

According to the TPR II Terms of Reference, the country group workshop discussions should lead to conclude on the findings categorised as an 'area of good performance' or 'area for improvement'. These are defined therein as follows:

A National area of good performance which should be understood as an arrangement, practice, policy or programme related to fire protection that is recognized by the TPR Review Team as a significant accomplishment for the country and has been undertaken and implemented effectively in the country and is worthwhile to commend.

A National area for improvement which should be understood as an aspect of fire protection identified by the TPR Peer Review Team where improvement is expected, considering the arrangement, practice, policy or programme generally observed in other participating countries. It may also be self-identified by the country itself (i.e. self-assessment) where improvement is appropriate.