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**NUCLEAR ENERGY AGENCY  
COMMITTEE ON NUCLEAR REGULATORY ACTIVITIES**

**NEA/CNRA/R(98)2**  
**Unclassified**

**Working Group on Inspection Practices (WGIP)**

**INSPECTION OF LICENSEE ACTIVITIES IN EMERGENCY PLANNING**

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## **ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT**

Pursuant to Article I of the Convention signed in Paris on 14th December 1960, and which came into force on 30th September 1961, the Organisation for Economic Co-operation and Development (OECD) shall promote policies designed:

- to achieve the highest sustainable economic growth and employment and a rising standard of living in Member countries, while maintaining financial stability, and thus to contribute to the development of the world economy;
- to contribute to sound economic expansion in Member as well as non-member countries in the process of economic development; and
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### **NUCLEAR ENERGY AGENCY**

*The OECD Nuclear Energy Agency (NEA) was established on 1st February 1958 under the name of the OEEC European Nuclear Energy Agency. It received its present designation on 20th April 1972, when Japan became its first non-European full Member. NEA membership today consists of all OECD Member countries except New Zealand and Poland. The Commission of the European Communities takes part in the work of the Agency.*

*The primary objective of the NEA is to promote co-operation among the governments of its participating countries in furthering the development of nuclear power as a safe, environmentally acceptable and economic energy source.*

*This is achieved by:*

- *encouraging harmonization of national regulatory policies and practices, with particular reference to the safety of nuclear installations, protection of man against ionising radiation and preservation of the environment, radioactive waste management, and nuclear third party liability and insurance;*
- *assessing the contribution of nuclear power to the overall energy supply by keeping under review the technical and economic aspects of nuclear power growth and forecasting demand and supply for the different phases of the nuclear fuel cycle;*
- *developing exchanges of scientific and technical information particularly through participation in common services;*
- *setting up international research and development programmes and joint undertakings.*

*In these and related tasks, the NEA works in close collaboration with the International Atomic Energy Agency in Vienna, with which it has concluded a Co-operation Agreement, as well as with other international organisations in the nuclear field.*

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## **COMMITTEE ON NUCLEAR REGULATORY ACTIVITIES**

The Committee on Nuclear Regulatory Activities (CNRA) of the OECD Nuclear Energy Agency (NEA) is an international committee made up primarily of senior nuclear regulators. It was set up in 1989 as a forum for the exchange of information and experience among regulatory organisations and for the review of developments which could affect regulatory requirements.

The Committee is responsible for the programme of the NEA, concerning the regulation, licensing and inspection of nuclear installations. The Committee reviews developments which could affect regulatory requirements with the objective of providing members with an understanding of the motivation for new regulatory requirements under consideration and an opportunity to offer suggestions that might improve them or avoid disparities among Member Countries. In particular, the Committee reviews current practices and operating experience.

The Committee focuses primarily on power reactors and other nuclear installations currently being built and operated. It also may consider the regulatory implications of new designs of power reactors and other types of nuclear installations.

In implementing its programme, CNRA establishes co-operative mechanisms with NEA's Committee on the Safety of Nuclear Installations (CSNI), responsible for co-ordinating the activities of the Agency concerning the technical aspects of design, construction and operation of nuclear installations insofar as they affect the safety of such installations. It also co-operates with NEA's Committee on Radiation Protection and Public Health (CRPPH) and NEA's Radioactive Waste Management Committee (RWMC) on matters of common interest.

## **ABSTRACT**

The report presents information on regulatory inspection activities with respect to emergency planning in NEA Member countries. The focus of the report is on the third section. It reviews the similarities and differences in inspection practices to evaluate compliance with the requirements over which the regulatory body (RB) has jurisdiction.

## FOREWORD

The CNRA believes that safety inspections are a major element in the regulatory authority's efforts to ensure the safe operation of nuclear facilities. Considering the importance of these issues, the Committee has established a special Working Group on Inspection Practices (WGIP). The purpose of WGIP, is to facilitate the exchange of information and experience related to regulatory safety inspections between CNRA Member countries

Following discussions at several meetings on the topic of what is expected by the regulatory body regarding inspection criteria, WGIP proposed putting together a compilation of Member countries practices on regulatory inspection practices with respect to licensee emergency planning. CNRA approved this task and the following report. Information was collected from a questionnaire which was issued in 1996.

Much appreciation and thanks go to the task group members listed below, who provided valuable time and considerable knowledge into this report. Special acknowledgement is given to Mr. Richard Aubrey of AECB (Canada), who as task leader provided much of the technical analysis provided throughout the report as well as many man-hours in editing and compiling the final report.

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## 1. INTRODUCTION

This report presents information on regulatory activities with respect to emergency planning in WGIP member countries. To establish the basis for these activities, the report first reviews the legal requirements on licensees and second looks into the extent of the regulatory jurisdiction. The focus of the report is on the third section. It reviews the similarities and differences in inspection practices to evaluate compliance with the requirements over which the regulatory body (RB) has jurisdiction. Note that information from one of the fourteen countries presently is not available, as new legal requirements are being introduced that preclude definitive statements on inspection practices.

Information that provided the source material for the report came from the responses to a questionnaire issued in the fall of 1996. WGIP members described the legal requirements on licensees, the jurisdiction of the regulatory body, and the inspection practices in their respective countries. Annex A presents a compilation of responses received. A complete set of responses are available upon request.

In the sections that follow, the term "plan" refers to documentation that describes commitments and requirements for such elements as a response organisation, implementing procedures, resources, facilities, equipment, and the testing and subsequent upgrading of the response capability. The "programmes" under the plan maintain that capability by ensuring its requirements and commitments are being met, while "exercises" test performance through simulation. Any reference to "procedures" relates to those procedures that are required under the plan to provide consistent and timely information and response actions. They do not refer to procedures used by Control Room operators to regain control of the reactor.

## **2. LICENSEE RESPONSIBILITIES**

### **2.1 Legal Requirements**

All countries have legal requirements specifying that licensees must have on-site emergency plans in place. These requirements take the form of Acts, Decrees, Executive Orders, Regulations or Licence Conditions. Off-site plans are also subject to legal requirements, but not usually as a licensee responsibility.

### **2.2 Duties of Other Agencies**

The off-site authorities in all countries co-ordinate protective measures for the public and the environment with licensees. Responsibility for these measures is entrusted to such authorities as municipal and state or provincial governments, prefects, and federal ministries or agencies. In some cases, arrangements are in effect for services such as ambulance and fire brigades to assist with the on-site response, if necessary.

### **2.3 Documentation**

All licensees must have an emergency planning document that covers the infrastructure that is in place to ensure preparedness. Lower level documents, such as procedures, are also produced but are variably subject to RB review and approval. Sometimes the documentation submitted to RBs covers off-site measures too.

### **2.4 Exercise Requirements**

Most licensees conduct an annual exercise, although not always required legally. In one case, the requirement is to exercise biennially. The exercises often are held in conjunction with off-site authorities, but practices here vary considerably. Major exercises involving state or provincial and national authorities usually are done annually, although there are instances where the requirement extends to 6 or 8 years. Licensees typically also run non-obligatory drills.



### **3. THE REGULATORY BODY**

#### **3.1 Jurisdiction**

In all countries, the RB has authority to approve or inspect against on-site plans. There are two instances where the RB is also the ultimate authority for off-site plans.

#### **3.2 Hazard Coverage**

Both radiological and non-radiological hazards are covered by the emergency plans of all licensees, but there is one case where the RB has jurisdiction only over nuclear emergencies.

## **4. INSPECTION PRACTICES**

### **4.1 Exercises**

Although regulatory bodies without exception observe exercises, inspection practices differ. In some cases, there are set frequencies while in others no fixed schedule seems to exist. One RB is involved too in scenario preparation. Besides observing the exercise, several RBs also assume their roles as part of the response organisation in an emergency.

### **4.2 Scope and Expertise**

The scope of the observations conducted in all countries has several similarities. Common functions observed include management (command and control) and communications. Focus tends to be on the attainment of objectives such as coherence and correctness of actions. The number of RB inspectors observing an exercise varies significantly, from one or two to as many as eight. Most countries stated that inspectors both knowledgeable in emergency preparedness and in the specialised area being observed make up the team. One country indicated that the off-site authority's observation team may number from 20 to 30 individuals.

### **4.3 Procedural Review**

Practices vary widely here. A couple of countries review procedures, but not systematically. In four cases, the RB analyses and approves them. Two do not formally analyse or approve, but assess adequacy through observation. Another verifies consistency with the approved plan. Finally, three state explicitly that procedures are a licensee responsibility. One nevertheless checks for compliance with legal requirements.

### **4.4 Plan and Programme Viability**

Most RBs check the viability of plans and programmes through inspection. These inspections typically look at document validity, equipment availability, communications and training. The majority of countries include the inspections as part of a core programme.

### **4.5 Frequencies**

For inspections of plans and programmes, frequencies vary from one to three years. The duration of the inspection ranges from one day to five days, where one to four inspectors make up the team. As for resources, the site visit may consume a minimum of 2 inspector-days to a maximum 20 inspector-days every three years, depending again on country. This works out to a resource expenditure that ranges from less than 1 to 7 inspector-days annually.

#### **4.6 Standards, Criteria & Guidelines**

The RBs in two countries have a set of criteria or standards in place to govern inspections of plans and programmes. Others are less specific. In three cases, there is a general inspection guide, while another uses its national emergency plan for guidance. Two countries make use of international guidelines in the conduct of inspections. There are three countries where neither criteria nor written guidance are in use.

#### **4.7 Findings and Follow-Up**

Most RBs issue reports following inspections that specify findings and follow-up actions. Follow-up is done according to national practice. Databases or other formal tracking systems are used by some, while others use inspections to check on the status of licensee corrective actions from previous inspections or exercise observations. Normal contact and meetings are used by others that sometimes complement the tracking system, and other times the report.

## 5. CONCLUSIONS

Analysis of the information provided in the responses generated a number of conclusions about common practices of all member countries and others where there are notable differences. Between these two extremes are practices followed by a majority.

### 5.1 Common Practices

- legal requirements are in place specifying that licensees must have on-site plans;
- the RB has authority to approve or inspect against on-site plans;
- plans cover both radiological and non-radiological emergencies;
- off-site authorities co-ordinate protective measures for the public;
- exercises are observed, in particular the management and communications aspects;
- the focus of the observations is on attainment of objectives;
- teams are made up of inspectors knowledgeable in EP and in pertinent technical areas;

### 5.2 General Practices

- annual exercises are held, often in conjunction with off-site authorities;
- the RBs inspect plans and programmes for viability, as part of a core set;
- inspections focus on document validity, equipment availability, and communications;
- a report is issued that specifies findings and follow-up actions;

### 5.3 Different Practices

- some conduct systematic reviews and approval of procedures, others do so informally on an ad-hoc basis, or not at all;
- inspection frequencies are either fixed or variable, typically from 1 to 3 years;
- duration of an inspection is from 1 to 5 days, involving from 1 to 4 inspectors;

- resource commitment for the on-site visit varies from 1 to 7 inspector-days per year for each licensee;
- anywhere from 1 to 8 inspectors observe exercises;
- some RBs apply standards or criteria to evaluations of licensee EP, while others do not;
- formalised tracking systems are in partial use.

This report on RB practices for inspecting licensee activities in emergency planning demonstrates that exchanges of information of this nature are most beneficial. They provide a forum to calibrate against world practice. In so doing, member countries may well benefit from experience gained elsewhere. The report presents a consolidated information source of good practices that RBs may consider for their own inspection programmes.

1. LEGAL REQUIREMENTS ON LICENSEES		
Areas		
1.1 - Legal Requirements		1.2 - Other Agencies
<b>Belgium</b>	the Licence Royal Decree describes general operating conditions, internal and external; the Royal Decree for the Emergency Plan for the Nuclear Risks for the Belgian territory describes organisation and responsibilities for emergency situations	exercise objectives are defined in co-operation with Ministry of Internal Affairs
<b>Canada</b>	the initial on-site and off-site plans are required before start up according to Regulation by Licence Condition, significant changes to the on-site plan require RB approval; annual reviews are similarly required	off-site plan integration is covered by licensees through discussion and agreements with municipal and provincial governments; local ambulance and fire brigade service may be provided on-site if necessary
<b>Finland</b>	the licensee bears responsibility for all on-site activities; the Fire and Rescue Law gives the right to the Local Fire Chief to lead rescue and fire-fighting operations	the Ministry of Interior requires all authorities, e.g. police, fire departments, medical and social services, to plan for emergencies; local and regional rescue authorities prepare the off-site plans required by the Ministry of Interior
<b>France</b>	by Decree, the on-site plan must be submitted to the RB and tested before operation begins; also by Decree, the prefect must write and approve the off-site plan	on a local level the prefect draws up the off-site plan that supports the operating organisation and external response resources; nationally, several departments of government act in an advisory capacity to the prefect, who is the off-site decision-maker; the RB has representatives both on-site and off-site
<b>Germany</b>	several laws and guidelines are issued at the federal level; the RB inspects licensees' compliance with the laws and guidelines; advisory committees issue recommendations; licensees are obliged to prevent any unnecessary radiation exposure or contamination, must report accidents, incidents and events, and appoint a nuclear safety officer	licensees shall support the local authority responsible for emergency response and preparedness
<b>Hungary</b>	in accordance with the new Atomic Energy Act, the licensee is primarily responsible for on-site EP and is obliged to eliminate or mitigate the consequences of a nuclear accident	several ministries and national organisations support the Governmental Commission of Nuclear Emergency Preparedness (GCNEP) at the state level, the Ministry of the Interior has the lead role, the president of the GCNEP is the Minister of the Interior; on a county level, the Defence Committees are responsible for handling nuclear emergencies
<b>Italy</b>	legislation requires the setting up of an Emergency Plan for each nuclear plant	approval of the Plan is by the Provincial Energy Committee, co-ordinated by the Prefect and Ministry of the Interior

1. LEGAL REQUIREMENTS ON LICENSEES		
Areas (cont'd)		
1.1 - Legal Requirements		1.2 - Other Agencies
<b>Japan</b>	the Disaster Counter Measure Basic Act (a law prescribing emergency preparedness and response by national and local governments and utilities) and the Law for the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors (LRNR) stipulates requirements with respect duties and responsibilities for licensee emergency planning	the Japan Atomic Energy Research Institute and the Power Reactor and Nuclear Fuel Development Corporation cooperate in radiation monitoring activities; the National Institute of Radiological Sciences provides medical treatment for contaminated individuals
<b>Netherlands</b>	the licence requires that the NPP has fire prevention, detection, and fighting programme; it also requires the NPP to have an on-site emergency plan and organisation; both aspects must interface with off-site plans, including those at the municipal level	the national authorities directed by the Ministry of Home Affairs, with technical advice from the RB, co-ordinates protective measures for the public and the environment; both can give the NPP orders to perform certain actions
<b>Spain</b>	the nuclear and radioactive Installations Decree establishes that the licensees must have an emergency Plan approved by the Ministry and the RB; the Civil Protection law states that the Ministry of Interior must prepare off-site plans; there is a Decree on public alerting; the RB has two safety guides to which licensees must adhere	Ministry of Interior is responsible for ensuring public safety; the Ministry thus requires all authorities (e.g., fire, police, medical, social) to help fulfil local and provincial responsibilities: the RB has representatives to assist in off-site activities and assessments
<b>Sweden</b>	the Swedish Rescue Services Act, the Act on Nuclear Activities, and the Radiation Protection Act, with subsidiary ordinances, together with international and bilateral agreements integrally govern nuclear emergency preparedness	the County Council, the RB and the Radiation Protection Institute (SSI) are notified of malfunctions or unplanned releases; SSI leads and co-ordinates measurements of radiation on the national level, and advises counties and national authorities concerning measures to minimise dose; for off-site EP, county and national authorities have responsibilities
<b>Switzerland</b>	two regulatory guides contain the licence requirements for emergency planning; the regulations contain technical criteria for warning and alerting of the public and authorities; the RB must accept the criteria	the NPP is responsible for necessary measures on-site and for timely alerting of off-site authorities; several authorities are involved in the judgement of the off-site situation, i.e. National Emergency Operation Centre, Federal Council, States and Communities
<b>United Kingdom</b>	a Licence Condition relating to emergency arrangements, and two Regulations on Ionising Radiation and on Public Information for Radiation Emergencies set out the legal requirements	the ambulance service county fire brigade will assist on-site if required; the police will provide off-site co-ordination; the RB monitors; co-ordination of off-site action by national agencies takes place at local emergency centres; the lead government department sets up a briefing centre
<b>United States</b>	by Licence Condition, NPPs must follow and maintain in effect emergency response plans that meet RB standards and requirements, licensees must also submit implementing procedures and the off-site plans to the RB	the RB bases its findings with respect to the off-site plan on a federal agency charged with lead responsibility for state and local planning

1. LEGAL REQUIREMENTS ON LICENSEES		
Areas (cont'd)		
	1.3 - Documents	1.4 - Exercises
<b>Belgium</b>	an Internal Emergency Plan (IEP), covering organisation, function descriptions, instructions, and guidance is in effect; the IEP covers limited surveys	at least one annual exercise involving off-site authorities is required; three other nonobligatory exercises take place to test IEP and/or train staff
<b>Canada</b>	there is an emergency plan covering such aspects as organisation, equipment, qualifications, training, documentation, responsibilities, personnel and equipment protection; implementing procedures are also in place	usually at least one annual integrated exercise to test response capability is carried out; various numbers of shift drills covering each type of emergency are also done, but there is no standard
<b>Finland</b>	the On-Site Emergency Plan and procedures; Emergency Operating Procedures (symptom-based and event-based) for plant operation; fire-fighting plans for fighting fires in different plant areas	the RB requires licensees to organise annually one major emergency exercise and to participate in off-site exercises; there also must be an annual training programme including smaller exercises during which partial emergency activities are tested or practised; major combined on-site and off-site exercises are organised approximately every 3 years as required by the Ministry of the Interior
<b>France</b>	the on-site plan must be submitted to the RB for comment; the operating organisation also writes procedures that the RB examines	the government regularly organises national nuclear emergency exercises with operating organisations; the organisations also periodically carry out their own exercises, sometimes combining them with the prefect's exercises; the Governmental Commission of Nuclear Emergency Preparedness initiates exercises
<b>Germany</b>	manuals prepared by licensees include alerting of licensee-crisis-staff, reporting to the responsible authorities, on-site accident management measures, and assessment of the size of affected areas	according to federal legal requirements, licensees shall participate in the exercises and other training events scheduled by the emergency control authority
<b>Hungary</b>	the elaboration of the on-site emergency plan is the responsibility of the licensee, and it is to be approved by the authorities of competent jurisdiction	exercises and training are arranged for the leading organisations from one to three times a year; for executive organisations an annual training session is held; yearly exercises are planned for co-operation with off-site organisations
<b>Italy</b>	an operative annex to the Emergency Plan relates to the operator; the annex gives the responsibilities, duties, actions, and resources; detailed operating procedures generally are not given in the annex, but form "internal procedures"	there is no legislative requirement to carry out regular emergency exercises; the obligation to conduct regular exercises is specified in the Technical Specifications enclosed with the Operating Licence; exercises must take place annually



1. LEGAL REQUIREMENTS ON LICENSEES		
Areas (cont'd)		
	1.3 - Documents	1.4 - Exercises
<b>Japan</b>	manuals for implementing procedures as well as emergency plans and safety rules are prepared by licensees; these manuals cover the emergency response organisation, emergency response, and emergency preparedness	exercises are required by the Disaster counter Measure Basic Act; licensees must conduct exercises at least once a year in accordance with their emergency plans and safety rules
<b>Netherlands</b>	all plans are sent to the RB; lower level documents are received also, but these are not subject to approval	both firefighting and the on-site emergency plan must be practised yearly; normally every year there is an off-site emergency exercise with the national authorities
<b>Spain</b>	an on-site plan is produced by licensees; the plan and its procedures contain the organisation, equipment, qualification, training, alerting, reporting, etc.; on-site plans and changes thereto are subject to RB and Ministry approval; off-site measures are included in the off-site plans produced by the Ministry of Interior; the RB helps write these plans for consistency with the on-site plans	an exercise must be conducted by each NPP every year; it includes site emergency arrangements demonstration and off-site communications; an RB safety guide establishes the scope; other minor exercises are held for training, according to an RB approved training programme; one major exercise involving all pertinent authorities is held about every 3 yrs, but does not require public involvement
<b>Sweden</b>	relevant documents prepared by the licensees are Technical Specifications, Emergency Operational Procedures, Manual for Manager on Duty, Manuals for the On-Site Emergency Response Organisation, including education, training and exercises; detailed requirements for other exercises are developed by the licensee	the conduct of exercise is included in the general conditions connected to the permit; in practice, several exercises of varying nature, scope and content are performed; one large central exercise is held annually; detailed requirements for other exercises are developed by the licensee
<b>Switzerland</b>	the plan defines the responsibilities of the planning organisation, actions to be taken, types of emergencies envisaged, alarm systems on and off-site, duties of staff, and the scheduling of drills; the NPP has few off-site tasks; it is responsible for the protection of site personnel and communication to the surrounding area; emergency procedures are also in place	exercises are conducted yearly with different scenarios; every 8 yrs there is a federal exercise involving all pertinent authorities; the requirements for exercises are in a RB Guideline
<b>United Kingdom</b>	site licences require documentation on emergency planning; these include a plan that cannot be changed without RB approval; lower tier documents under the plan provide detail and further text on licensee activities and interactions; in all cases the documentation outlines off-site measures that may be needed to protect the public	the RB requires a demonstration of the site emergency arrangements at each NPP every year; there are programmes of exercises to rehearse the function of local emergency centres and wider government involvement; each centre is exercised usually every three years; there is an annual national exercise involving the lead government department
<b>United States</b>	the RB must approve plans and procedures; changes to the on-site plan or procedures require RB approval, unless the changes do not reduce effectiveness; the responsible federal agency must review and approve changes to off-site plans	an on-site EP exercise must be conducted every two years; off-site exercises also have to take place biannually; a state is required to participate in an ingestion pathway exercise every six years; there is no requirement to involve the public in any of the EP exercises

2. JURISDICTION OF THE REGULATORY BODY		
Areas		
2.1 - Jurisdiction		2.2 - Hazard Coverage
<b>Belgium</b>	the RB assesses the adequacy of the IEP for protection of workers; Ministry of Health confirms off-site protective measures	radiation, and others such as fire, chemical, explosion, electrical
<b>Canada</b>	the RB approves the on-site plan, including interfaces with off-site authorities; the provinces are responsible for off-site protective measures; the federal government has a role for trans-boundary emergencies	radiation and conventional emergencies, such as fire, chemical, medical and toxic gas
<b>Finland</b>	the Ministry of Interior has the main responsibility on rescue services; the role of the RB defined in the Nuclear Energy Act, includes that of advisor to rescue authorities; the RB approves on-site plans when construction and operation licences are granted; large modifications require RB approval; off-site plans fall under the Ministry of Interior	nuclear radiation and fire hazards are covered in the on-site plan; certain chemical hazards are covered too
<b>France</b>	the RB must receive the on-site emergency plan before start-up; the RB also provides the prefect with technical and organisational information needed for the off-site plan	radiological and non-radiological emergencies are taken into account, including chemical, fire and explosion accidents
<b>Germany</b>	each state has its own law on emergency response; federal requirements set out basic principles for emergency control plans; state ministries are responsible for reviewing and updating the plans; co-operation is ensured by official liaison officers; requirements on licensees are specified for the Operating Manual by the Nuclear Safety Standards Commission; compliance with the requirements is subject to inspection by the state RB	the Operating Manual of licensees covers radiological protection and monitoring, fire protection, as well as reporting criteria for special circumstances
<b>Hungary</b>	according to Government Decree 196/1996, the minister supervising the RB determines the requirements for EP, the system of preventive actions and provides EP inspections	the RB has jurisdiction over nuclear hazards only
<b>Italy</b>	the legislation noted in 1.1 above lays down a specific procedure for the compilation and approval of the Plan by competent authorities	

2. JURISDICTION OF THE REGULATORY BODY		
Areas (cont'd)		
2.1 - Jurisdiction		2.2 - Hazard Coverage
<b>Japan</b>	adequacy of emergency plans are ensured by observance of guidelines established by the national committee for emergency preparedness and responses; the committee consists of government ministries and the Nuclear Safety Commission; several agencies cooperate with licensees to ensure public safety	emergency plans cover natural disasters, fire and explosion of large scale as well as nuclear hazards
<b>Netherlands</b>	it is not prescribed that the RB shall approve these plans; only an informal review takes place following which comments may be sent to the licensee, if judged appropriate	fire and nuclear-related emergencies are covered by the on-site plan
<b>Spain</b>	the RB has overall responsibility regarding adequacy of the emergency plan at an NPP as part of the licensing process; it reports to the Ministry for approval; some reports are mandatory; the RB provides the Ministry of Interior with advice on off-site plans; its role is to give criteria to authorities and participate in the national response	approved plans cover all hazards that potentially could affect safe plant operation with safety or radiological consequences (e.g., fire, chemical, explosions)
<b>Sweden</b>	the RB may issue regulations on measures to maintain safety, including emergency preparedness	the emergency plan at the NPP includes all extraordinary circumstances that may affect safe operation
<b>Switzerland</b>	the co-ordination of all aspects of emergency preparedness is the responsibility of a Federal Commission; the RB is responsible for the supervision of on-site preparedness	all internal and external initiating events are contained in the plan
<b>United Kingdom</b>	the NII is the sole RB with jurisdiction over emergency arrangements or contingency plans at NPPs	fire, chemical, and other non-nuclear hazards are covered under the plans that the RB regulates
<b>United States</b>	the RB has ultimate authority regarding overall adequacy of EP at an NPP; as part of the licensing process, the RB relies on input from the responsible federal agency regarding off-site preparedness	all hazards that potentially could affect plant operation are covered in the plan; fires, toxic chemical releases, aircraft crashes, and severe natural events are included the off-site plans specifically focus on radiological emergencies

3. INSPECTION PRACTICES		
Areas		
3.1 - Exercise Observation		3.2 - Scope and Expertise
<b>Belgium</b>	the RB assumes its role for external exercises and frequently observes on-site behaviour of licensee participants; for internal exercises, there are less frequent observations; reports made, attends debriefings	emergency management, adequacy of measures taken, notification and communication are observed, 3 inspectors participate in the RB's role, 1 or 2 observe
<b>Canada</b>	exercises covering all types of emergencies are held, sometimes integrated, specialised teams observe exercises every three years against performance-based criteria; resident inspectors observe two shift drills per year	mitigation, protection of plant personnel, protection of the public and the environment, return to normal operation, and exercise adequacy are looked at; team size depends on scenario and objectives (4-8), members chosen based on function observed and EP knowledge
<b>Finland</b>	the RB licensee, and usually the core direction groups of local rescue authorities participate in a major exercise once a year; every third or fourth year the Ministry of Interior participates; training simulators are used to practice communication, decision-making and follow-up; the RB also inspects the exercise	typically 1 or 2 inspectors cover the emergency planning aspects and one inspector looks at process/plant operation aspects; in the case of a fire exercise, one fire expert also participates
<b>France</b>	national exercises test the whole emergency response system, for which there are a limited number of observers from other prefectures, government councils, or neighbouring countries; local and partial exercise run by the prefects are sometimes observed by the RB	organisation of command posts, coherence of actions and instructions between national and local command posts are observed functions
<b>Germany</b>	on-site exercise are held in intervals of not more than one year; types include on-site personnel only, partial exercises by licensee staff augmented by the emergency response teams of the local authorities, and administrative exercises involving only the decision-making staff; full maneuver exercises are held at irregular intervals; some licensee exercises are observed by on-site inspectors of the responsible authority	aspects observed include adequacy of the emergency response organisation and emergency equipment, and adequacy of notification and communication; number of inspectors varies; normally one inspector responsible for the NPP observes the exercise
<b>Hungary</b>	N/A	N/A
<b>Italy</b>	for exercises involving outside bodies, the RB prepares the scenario; the RB observes exercises performed by the operators in compliance with the Technical Specifications; sometimes observers also provide simulated technical data or stimulate actions and measure to be taken	observers check the correctness and correspondence of operator actions to those laid down in the Plan and internal procedures

3. INSPECTION PRACTICES		
Areas (cont'd)		
3.1 - Exercise Observation		3.2 - Scope and Expertise
<b>Japan</b>	various types of exercises are conducted by licensees, e.g.; exercises for on-site personnel only, those for both on-site and off-site employees of the licensees, and those implemented by local government; resident inspectors of the RB witness exercises and provide comments or advice	aspects observed by resident inspectors during exercises include adequacy of the response organisation and personnel, promptness and accuracy of notifications, and adequacy of equipment such as that used for radiation protection, monitoring and communications; the number of resident inspectors at a station varies from 2 to 5, having expertise in mechanical, electrical or civil engineering; at least one of the inspectors witnesses an exercise
<b>Netherlands</b>	during the yearly off-site emergency exercise the RB observes how the co-ordination and communication (internal and external) at the NPP takes place; on-site emergency exercises are sometimes witnessed	one of the four RB inspectors observes the exercise; all are familiar with the NPP and the relevant emergency procedures and are trained in the procedures of the off-site emergency plan
<b>Spain</b>	three types of exercises exist; several partial exercises for training occur that are followed by site inspectors; annual NPP exercises take place for which the RB follows and participates; off-site exercises are conducted by the Ministry of Interior during which the RB participates	partial exercises for fire, evacuation are followed by site inspectors; annual exercises focus on organisation, equipment, notification and communication; site inspectors follow operational aspects; two inspectors observe the exercise, one participates in the provincial building and about 15 in the RB's emergency centre; off-site exercises have similar participation plus several involved with local activities as observers and participants
<b>Sweden</b>	various types of exercises take place; these include table top, single unit, on-site staff only, both on-site and off-site exercise; one large exercise is held every year; the RB participates in a limited number of on-site exercises, observes a few of the combined on-site/off-site exercises, and participates in all central and large exercises	the RB's observation of exercises is performance-based rather than compliance oriented; the observations focus on command, ability to use basic material and information, perception of general situation, technical analysis ability, use of procedures, and communications; key functions observed include the Control Room, Duty Manager, Technical Support Centre, and NPP Emergency Centre management; the number of inspectors varies, but usually one per function observed
<b>Switzerland</b>	there are three types of technical emergency exercises - plant, staff and general; there are also security emergency exercises	N/A
<b>United Kingdom</b>	there are 3 levels of exercises - (1) site, (2) local emergency centre, and (3) national debriefing centre; the RB observes one site exercise each year at each NPP; the RB participates and observes the main activities at the local emergency centre for level 2; it does the same for level 3 and participates in the debriefing	all functions are observed for level 1; focus is on command and control, communications, decision taking and timeliness for level 2 and 3; five inspectors typically observe level 1 and two for level 2 and 3 exercises; observers must know key emergency planning requirements and the specific function being observed
<b>United States</b>	licensees conduct the biannual exercise jointly with state and local governments; they test capabilities to protect public health and safety; the RB evaluates on-site while the federal agency looks at the off-site response	4 to 5 inspectors spend 3 to 4 days at the NPP; EP specialists are on the team, as are inspectors with pertinent specialised backgrounds; areas observed include management and co-ordination, accident assessment, classification, etc.; the federal agency team looking at off-site response may consist of 20 to 30 observers

3. INSPECTION PRACTICES		
Areas (cont'd)		
3.3 - Procedure Review		3.4 - Plan and Programme Review
<b>Belgium</b>	reviews are not done systematically; approval is not needed but recommendations are sometimes made	validity is not assessed, availability of infrastructure and equipment is verified during inspections
<b>Canada</b>	such reviews were done in the past but the current focus is on the emergency plan; adequacy of procedures is evaluated during inspection through interviews and observation of performance during exercises	the RB reviews plans every three years against pre-defined criteria; specific changes are reviewed pursuant to Licence Condition; areas covered are cited in 1.3 above
<b>Finland</b>	the On-Site Emergency Plan (including procedures) is approved by the RB; small modifications are done without RB approval; procedures are handled during inspections	the RB has a Periodic Inspection Programme that includes two annual inspections on emergency preparedness; one of the inspections checks facilities, equipment, materials, organisational aspects, training programmes and one of the inspections looks at an exercise
<b>France</b>	the RB analyses and approves the procedures, and examines how well the operational nature of the procedures has been taken into account	the RB periodically inspects the on-site plan and procedures; inspections involve document review and a site visit to check the validity of documents, examination of external equipment and availability of communications equipment and knowledge of its use through role-playing
<b>Germany</b>	the supervisory authority assess the Alarm Regulation (part of the Operating Manual) as part of Safety Specifications during the operation phases when there are modifications; verification of the on-site procedures is the licensees' responsibility; the procedures are made available to the supervisory authority, which checks for compliance with legal requirements	emergency procedures are included in the Emergency Procedures Manual; this Manual is submitted to the supervisory authority of the responsible RB; the RB checks the viability of the on-site emergency procedures during the appropriate exercises
<b>Hungary</b>	N/A	N/A
<b>Italy</b>	N/A	N/A

3. INSPECTION PRACTICES	
Areas (cont'd)	
3.3 - Procedure Review	3.4 - Plan and Programme Review
<b>Japan</b>	verification of procedures is a licensee responsibility; licensees must maintain emergency plans consistent with stipulated guidelines; the RB does not verify the procedures
<b>Netherlands</b>	the RB formally approves the Emergency Response Guidelines and the Function Restoration Guidelines; although not subject to RB approval, the on-site plans are checked to ensure they don't interfere with the national plans; the off-site plan is set up and checked by the national authorities, one of which is the RB
<b>Spain</b>	a controlled copy of the implementing procedures must be submitted by licensees to the RB; approval is not needed but the RB reviews for recommendations and consistency with the approved emergency plan
<b>Sweden</b>	verification of procedures is a licensee responsibility
<b>Switzerland</b>	a least once per year, the RB checks all aspects of emergency planning, including the procedures
<b>United Kingdom</b>	documents that are subsidiary to the plan are examined on a sample basis according to need
<b>United States</b>	licensees must submit implementing procedures to the RB, as well as any changes thereto

3. INSPECTION PRACTICES		
Areas (cont'd)		
3.5 - Frequency and Resources	3.6 - Standards and Criteria	3.7 - Recording of Findings
<b>Belgium</b>	a global inspection occurs annually	no specific document other than the "National Emergency Plan" is used for inspections
<b>Canada</b>	inspection and exercise observations are done tri-annually; inspections involve 4 specialists for 3 to 4 weeks each, including one week at site, observations can involve as many as 8 specialists for a similar amount of time	findings appear in reports; a computerised database is kept by the head office specialist team; resident offices track licensee responses through a separate tracking system used to follow up all licensee actions
<b>Finland</b>	inspection and exercise observation are done once per year; a typical inspection takes 1 - 2 days and 1 - 2 inspectors participate; inspectors are experienced in EP and have relevant accident-related technical knowledge	findings are recorded in an inspection protocol and inspection report; follow-up on corrective actions from findings of earlier inspections are checked; in some cases, the RB requests the submission of written reports
<b>France</b>	inspections are carried out once every three years and last one day; the team is made up of two or three inspectors; the observers of a safety exercise are present throughout and generally join the emergency response teams on a national or local level	an inspection guide serves as a basis to prepare a detailed agenda, but is not exhaustive; an assessment sheet, included with an exercise dossier put together with the operating organisation and prefect, provides a means to comment
<b>Germany</b>	inspections are carried out once every three years and last one day; the team is made up of two or three inspectors; the observers of a safety exercise are present throughout and generally join the emergency response teams on a national or local level	the findings are in a report, and a follow-up letter requests action; discrepancies and faults are used to update the inspection guide; meetings of exercise observers are used to compile comments into an annual review
<b>Germany</b>	in general, at each exercise one inspector responsible for the NPP is present; the duration is typically a couple of hours, but no more than a shift; there are no regulations regarding the required qualification of inspectorate personnel observing the exercise	the results of the observes exercise are compiled in a final after-action report; this report serves as a documented basis for the tracking of corrective actions; the tracking of such follow-up is a part of the regular inspection activities
<b>Hungary</b>	N/A	N/A
<b>Italy</b>	N/A	N/A
		at the end of exercises, the RB observers inform the operators of required modifications to procedures, systems or equipment



3. INSPECTION PRACTICES		
Areas (cont'd)		
3.5 - Frequency and Resources	3.6 - Standards and Criteria	3.7 - Recording of Findings
<b>Japan</b>	at least one resident inspector witnesses licensee exercises	resident inspectors verify that the exercises satisfy the aspects noted in 3.2 above; there is no standard or criteria stipulated for the verification; resident inspectors make comments for corrective action or improvement
<b>Netherlands</b>	yearly off-site exercise observations, periodic on-site observations and bi-annual inspections take place; the duration of the off-site is normally one day; on-site exercises take about two hours and are performed about 10 times per year; inspectors are familiar with both on-site and off-site procedures	resident inspectors record their inspection findings in a diary and report monthly to the Ministry of International Trade and Industry; tracking of follow-up activities by the licensee is conducted by the resident insp. if necessary as part of regular inspection activities
<b>Spain</b>	inspection and exercise observation are done once per year in each nuclear power plant; a typical inspection takes 3 days and 1 or 2 inspectors participate; the inspectors are experienced in emergency preparedness; the RB has an Emergency Office with adequate experts	some criteria and guidelines exist in the off-site plan; focus is on emergency classification and communications; an inspection procedure about direct follow-up of incidents helps the inspector check if important safety functions of the NPP are available
<b>Sweden</b>	inspection and exercise observation are done once per year in each nuclear power plant; a typical inspection takes 3 days and 1 or 2 inspectors participate; the inspectors are experienced in emergency preparedness; the RB has an Emergency Office with adequate experts	findings are recorded in an inspection protocol in the same way as other inspection activities: a licensee exercise report is issued to the RB within 30 days for review; corrective actions and follow-up activities are treated the same as other licensing areas, through letter requests for action or additional inspections to check corrective action status
<b>Sweden</b>	in 1993, a joint SKI-SSI theme inspection took place at all NPPs; this was repeated in 1996, with focus on follow-up actions; two theme inspections are planned by SKI in 1997; duration is normally two days, involving 3 to 5 inspectors; technical specialists and generalists make up the inspection team	theme inspections measure against requirements regulating the subject are carried out; for each function to be observed, the necessary ability is pre-determined, characterised and subsequently differentiated as "good ability", "ability", or "bad ability"
		the results of an inspection is documented in an inspection report and recommended follow-up actions are indicated; for significant findings, a separate letter is sent to the licensee for comments and proposed counter-actions

<b>3. INSPECTION PRACTICES</b>		
<b>Areas (cont'd)</b>		
<b>3.5 - Frequency and Resources</b>	<b>3.6 - Standards and Criteria</b>	<b>3.7 - Recording of Findings</b>
<b>Switzerland</b> a check is done each year		a debriefing takes place immediately after an exercise, reports are issued within two months; normal contacts are used to study matters raised in the reports; for each inspection, findings are written in an observation report that fixes follow-up actions
<b>United Kingdom</b> frequencies are noted above; level 1 exercises typically last 4 hrs, level 2 about 12 hours, and level 3 about 16 hrs, training records are examined routinely by the RB's site inspector; other items are checked only according to need	inspectors have been provided with guidance on the topics that need to be observed during exercises	findings and observations from level 1 are tracked and followed up by database, correspondence, and enforcement action; observations from level 2 or 3 exercises are listed in licensee reports that are seen by the RB before issuance; actions from these are pursued through meetings
<b>United States</b> the core inspection programme has two elements - programme verification and exercise observation; addition inspections or observations may take place; the core inspections are done every 18 months, involve 1 or 2 inspectors, and last 5 days	the frequency, scope and depth of the EP inspection programme for NPPs are defined in an inspection manual; the RB has set planning standards and requirements	findings are characterised by significance and entered into the regional tracking system; following an exercise, preliminary results are presented to the licensee; final reports are issued within 30 days; deficiencies are tracked; agency reports have a 90 day target; findings should be corrected within 120 days