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## **PUBLIC INFORMATION IN FRANCE CONCERNING THE TRANSPORT OF RADIOACTIVE MATERIALS**

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### **ABSTRACT**

Nearly ten years after enacting the Act of 13<sup>th</sup> June 2006 relative to Transparency and Security in the Nuclear field (TSN Act), the Act of 17<sup>th</sup> August 2015 relative to Energy Transition for Green Growth (TECV Act) steps up and reinforces the legal provisions in terms of transparency and public information.

The TECV Act explicitly sets out the role of ASN, French nuclear authority, and of IRSN, French public expert in the field of nuclear safety and radiation protection. Concerning the transport of radioactive materials, by the mean of websites and public meetings:

- ASN and IRSN present general information about transport and the regulatory provisions. In addition, ASN publishes an annual report that presents the state of nuclear safety and radiation protection in France, which includes transport activities.
- ASN includes public participation in the approval process for new package design or for renewal of certificate of compliance and later publishes these certificates.
- ASN publishes follow-up letters of the inspection.
- ASN consults the public on the projects of guidelines and regulatory texts.
- In case of an incident ranked at level 1 or more on the INES scale, ASN publishes an informative communication.
- IRSN publishes all technical assessments performed for ASN on its website.
- IRSN publishes every two years a technical review of all events involving a transport of radioactive materials.

The TECV Act also promotes public participation by strengthening the role of Local Information Committees (CLI). In 2016, in cooperation with the national association of the Local information committees (ANCCLI), IRSN organized a conference to exchange with public representatives and provide information about the transport of radioactive materials. During this conference, many subjects were discussed, including the regulatory context and package conceptions for the safe transport of radioactive materials, and also the preparedness and response for an emergency during the transport.

## **INTRODUCTION**

Since the enacting of the Act of 13<sup>th</sup> June 2006 relative to Transparency and Security in the Nuclear field (TSN Act), ASN and IRSN, public bodies in the field of nuclear safety, have initiated actions to inform the public on the regulatory provisions and also the assessment procedure leading to the approval of package designs used for the transport of radioactive materials.

Nearly ten years after, the Act of 17<sup>th</sup> August 2015 relative to Energy Transition for Green Growth (TECV Act) steps up and reinforces the legal provisions in terms of transparency and public information in the field of nuclear activities. Since, ASN and IRSN provide on a regular basis, public information regarding the transport of radioactive materials through different means of communication like websites, annual reports and conferences.

The package design approval process in France now includes the participation of the public with the information provided by the applicants, ASN and IRSN.

Finally, ASN and IRSN regularly take part in meetings and conferences organized with the local information commissions (CLI) to exchange information with the public and to promote the public participation.

## **FRENCH REGULATORY FRAMEWORK**

### Actors of the French organization

In France, the main actors in the nuclear field are: ASN, the nuclear safety authority, IRSN, the technical support organization (TSO), the applicants and the public (in particular presented by the Local Information Committees).

ASN, as an independent administrative authority, regulates nuclear safety and radiation protection in order to protect the workers, the patients, the public and the environment from the risks involved in nuclear activities. In the framework of the transport of radioactive materials dedicated to civilian uses, ASN is the competent authority for:

- monitoring the safe transport of radioactive materials by examining and delivering shipment authorizations and certification and conducting the inspection on the field;
- contributing in the drafting of international regulations and safety guidance developed and published by the International Atomic Energy Agency (AIEA);
- monitoring in emergency situations and regularly organizing emergency exercises;
- making available information to the public.

IRSN is a public institute with industrial and commercial activities (EPIC). IRSN is placed under the joint authority of the Ministry of Environment, Energy and Marine Affairs, the Ministry of Education, Higher Education and Research, the Ministry of Social Affairs and Health and the Ministry of Defence. IRSN is the French public expert in nuclear and radiological risks, and its

activities cover all the related scientific and technical issues in France and in the international arena. Its work therefore concerns a wide range of fields, including environmental monitoring, radiological emergency response, radiation protection in normal and accident situations, prevention of major accidents, and assessment in safety and security of nuclear reactors, plants, laboratories, transportation, and waste. Having the role of national public expert, IRSN contributes to public policies in the fields of nuclear safety and radiation protection for public and environment. As a research and scientific institution, IRSN acts in consultation with all stakeholders concerned by these policies, while preserving its independence of judgment. In case of emergency situations, IRSN evaluates the relevancy of the measurements performed by applicants, provides a technical support to ASN and contributes to the public information. In the field of the transport of radioactive materials, the main roles of IRSN consist to appraise safety demonstrations, transmitted by applicants in support to their approval requests, to assess the safety and support ASN in case of emergency situation involving a transport of radioactive materials. In addition, IRSN conducts research activities applied to the transport of radioactive materials and participates to international working groups relative to regulatory evolutions at the AIEA.

The applicants in the field of transport of radioactive materials are from many domains: nuclear cycles (fuel cycle and power plants), medical, industrial and research facilities...

Under the TSN Act, it is now mandatory to create a local information commission (CLI) for each nuclear facility or site. The missions of these CLIs are monitoring, public information and consultation on any matter concerning nuclear safety and radiological protection. The CLI members are all volunteers and consist of local elected officials, members of environment protection associations, representatives from the nuclear operator labour union and qualified persons. ANCCLI is their national federation.

### TSN Act and TECV Act

Nearly ten years after enacting the Act of 13<sup>th</sup> June 2006 relative to Transparency and Security in the Nuclear field (TSN Act), the Act of 17<sup>th</sup> August 2015 relative to Energy Transition for Green Growth (TECV Act) steps up provisions with regard to transparency and public information. This Act explicitly sets out and consolidates the missions of ASN and IRSN and also includes a set of provisions relating to the Local Information Committees (CLI) of the Basic Nuclear Installations (BNI). The TECV Act also reinforced the involvement of CLIs in decisions on issues like decommissioning or emergency preparedness and response.

Since these Acts came into force, the nuclear field has a system governing public access to information. Pursuant to Articles L. 125-10 and L. 125-11 of the Environment Code, including the TSN Act provisions in their wording resulting from the ordinance of 10<sup>th</sup> February 2016 introducing various provisions concerning nuclear activities, licensees must communicate to any person who so

requests, the information on the risks their activity presents for public health and the environment and the measures taken to prevent or mitigate these risks. There are provisions for protecting public safety and commercial and industrial secrecy. The right to be informed concerns also the risks associated to radioactive materials transport operations.

Article 7 of the Environment Charter embodies the right of participation of any citizen in the framing of public decisions having an impact on the environment. In addition, article L. 123-19 of the Environment Code provides a procedure of consultation of the public via Internet on draft regulatory texts having an impact on the environment. ASN has decided to apply this widely. Consequently, most important ASN draft statutory resolutions including transport of radioactive materials are considered as having an impact on the environment and are therefore subject to public participation.

Therefore, main challenges of IRSN were both how enhancing transparency and also developing dialogue and exchange throughout its expertise and assessment processes as explained below.

## **DESIGN APPROVAL PROCESS IN FRANCE**

In accordance with the AIEA regulation relative to the transport of radioactive materials [1], a certificate issued by ASN is required for the shipment of package designs loaded with radioactive materials presenting important nuclear safety, such as package in type B and C, packages containing fissile materials or loaded with more than 0.1 kg of UF<sub>6</sub>.

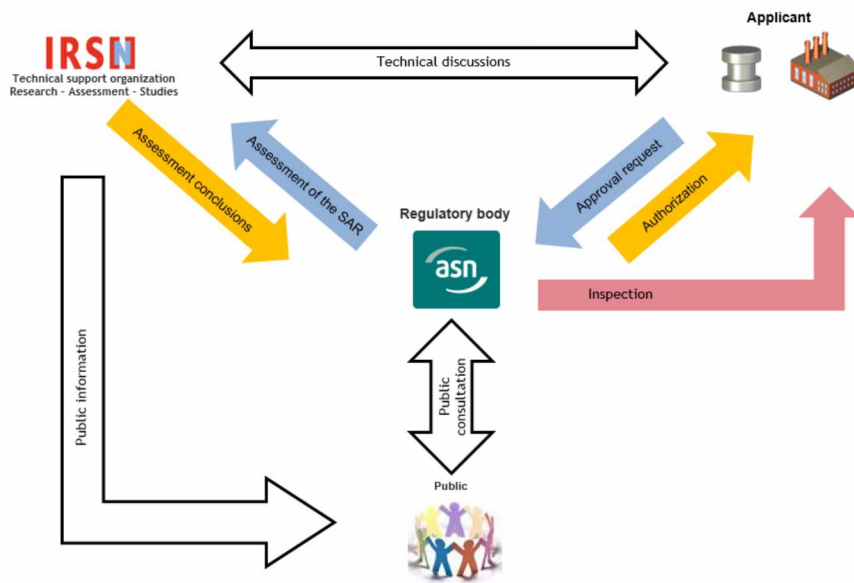
In support of the approval request for the package design, a safety analysis report (SAR) shall be provided by the applicant to justify the compliance of the package design regarding the applicable requirements. The main objectives of IRSN safety assessment are to evaluate the relevancy of the safety demonstrations and to appreciate the conservatism of assumptions considered. Following IRSN assessment, ASN makes a decision for approval or not of the package design.

Concerning the approval procedure, ASN publishes on its website the applicant guide [2] presenting the expected documents, the content of the SAR and process and duration of assessment. This guide also includes an appendix presenting a list of points that should be considered in the safety analysis report. This list, based on IRSN's experiences and feedbacks in the safety assessment of transport of radioactive materials, has evolved over the last years to take into account the most recent evolutions relative to the safety demonstrations, *e.g.* the consequences of a delayed impact of the content onto package components, the behaviour of special form materials during regulatory drop and fire tests, the thermal behaviour of packaging made of polyurethane foam in case of fire, the demonstrations provided to justify that the radiation level criteria under normal conditions of transport are met and also the manufacturing process [3].

Content of this experience feedback list is periodically communicated to ASN. The most recent topics are highlighted to update the French applicant guides in order to improve the completeness of the safety analysis report.

### Evolutions following the TECV Act

Since the application of the TECV Act, the package design approval process in France now includes the participation of the public with the information provided by the applicant, ASN and IRSN. An overview of the package design approval process in France is presented in the figured 1.



**Figure 1. Overview of the package design approval process in France**

In this process, the SAR presenting the main safety features of the package design transmitted by applicants, is published on the ASN website ([www.asn.fr](http://www.asn.fr)) for about 21 days in order to give people time to make their comments.

Since March 2016, IRSN publishes every 15 days on its website ([www.irsn.fr](http://www.irsn.fr)), the assessment letter presenting a summary and the conclusions of every assessments performed for ASN. This approach allows to improve the public knowledge and to fulfill the objectives in terms of transparency. In 2017, related to the transport of radioactive materials, the number of IRSN assessment letters published was 53 (over 383 assessment letters for all nuclear activities).

The transports of radioactive materials are considered as having an impact on the environment. Therefore, ASN drafts statutory resolutions, correspond to the draft approval certificates, are subjected to public participation. A draft statutory resolution is published on the ASN website for about 21 days, then, on the date of publication of the resolution at the latest, a synthesis of the remarks made, indicating those taken into account and a document setting out the reasons for the resolution will be published.

Furthermore, in a volunteer approach (as it is not required by the French legal system), ASN published guidelines to inform and consult the public. This approach allows to answer to the public's growing needs to understand and take part in decision-making on issues relating to health or environmental risks.

## **FEEDBACK FROM INSPECTIONS AND EVENTS IN FRANCE**

Control and regulation of nuclear activities is a fundamental responsibility of ASN. The aim is to verify that all transport stakeholders fully assume their responsibility and comply with the requirements of the regulations in order to protect workers, the public and the environment. Monitoring by field inspection is an important mission of ASN. It requires one or more ASN inspectors (nuclear safety inspectors and radioactive substance transport safety inspectors, labor inspectors and radiation protection inspectors) and sometimes the support of IRSN experts. Each inspection consists in performing spot checks on the conformity of a given situation with regulatory or technical baseline requirements. After the inspection, a follow-up letter is published on ASN website. In 2017, 64 inspections concerning transport activities have been performed.

The French regulations also require that every significant event (of a specified importance according to a criteria defined by ASN) occurred in a radioactive material transport operation to be reported to ASN, regardless of whether it had radiological consequences or not. The declarant must then send a detailed report of the event to ASN, including the corrective actions, taken to avoid the event occurring again. In the case of an incident ranked at level 1 or more on the INES scale, ASN publishes an informative communication on its website.

As part of its activities relating to radioactive material transport safety, IRSN analyses the events that occurred during transport and which were reported to ASN. The lessons learned allow to increase transport safety by improving the package design, operating practices or regulations. IRSN also publishes on its website every two years a review of all events involving a transport of radioactive materials [4].

## **INFORMATION OF LOCAL INFORMATION COMMISSIONS ON TRANSPORT OF RADIOACTIVE MATERIALS**

The TECV Act also comprises a range of provisions applicable to the CLIs promoting the public participation and strengthening role of the Local Information Committees (CLI).

To build a dialogue with civil society, in line with its Charter in Openness to Society [5], IRSN has launched various local initiatives aiming at strengthening dialogue with civil society on nuclear activities. During these meetings, the needs of public information concerning the transport of radioactive materials increased these last years. As a consequence, IRSN organized in cooperation with the national federation of the CLI (ANCCLI) a dedicated conference opened to the public.

The main objectives of this event, held in Paris in March 2016, were to present the role of the various actors, the regulatory context, to detail the tests applicable to the different types of package designs and to explain which real accident situations are covered, on the crisis management in the event of an accident. Stakeholders came from several horizons: institutional, but also industrial, representatives of local comities and associations. All participants were present to debate radiological risks associated to the transport activities.

This conference highlighted the benefits of an action of IRSN at local level to address concerns of the public and of sharing experience feedback on transport of radioactive material including events in France. In the past, IRSN participated in various different local initiatives in public awareness in the nuclear safety such as the joint ASN-IRSN mobile exhibition, entitled *Nuclear and Society*.

## **CONCLUSIONS**

The latest evolutions in the French legal system reinforce the public information and transparency of the decision made by the nuclear safety Authority.

In this context, ASN and IRSN conduct different public awareness actions in nuclear and radiation safety. In addition, the process of approval of package designs can now include information to and consultation of the public. In particular, key outcomes of the safety assessments performed by IRSN, are now publicly available. This evolution of the law was considered as a significant improvement of the transparency in nuclear and radiation safety.

Finally, the recent discussions with local committees of information and the public highlighted the need to strengthen the dialogue between civil society and the actors of the French regulatory framework. In particular, ANCCLI and IRSN have developed continuous technical dialogue on specific topics, such as transport of radioactive materials, which benefited for both, civil society and IRSN. Representatives of civil society could develop their own technical skills, gradually building a reciprocal understanding of expectations of all the actors, and facilitate the emergence of news ideas or hypotheses. These all contributed to enhance safety through citizen vigilance. In the meantime, IRSN could take benefit of the interaction with civil society for its expertise. Public vigilance contributes to safety and goes through transparency and pluralistic exchanges.

## **REFERENCES**

- [1] IAEA Regulation for the Safe Transport of Radioactive Material, No. SSR-6 (Rev. 1), 2018 Edition.
- [2] ASN Guide No. 7: Applicant's guide related to applications for shipment approval and certificate of package design or radioactive materials for civil usage transported by public roads, by water or by railroad.



- [3] Proceedings of the 18<sup>th</sup> International Symposium on the Packaging and Transportation of Radioactive Materials PATRAM 2016, “IRSN’s experience feedback list for the package design safety assessment”, Benoit Eckert and *al.*
- [4] IRSN report - Safety of the Transport of Radioactive Materials for Civilian Use in France - Lessons learned by IRSN from analysis of significant events reported in 2014 and 2015.
- [5] IRSN Charter on Openness to Civil Society in 2009.