



THE ROLE OF ELECTRICITY UTILITIES IN ENSURING ENVIRONMENTAL COMPLIANCE OF URANIUM SUPPLIERS

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Abstract

The Swedish Utilities: Vattenfall Fuel, OKG and BKAB (purchasing uranium and fuel cycle services for all Swedish reactors) have started "Nuclear Fuel and Environment Project, NFE". The purpose is to make environmental audits of companies with uranium mines, conversion, isotope enrichment and fuel fabrication facilities. Up to now five environmental audits have been carried out and another three are being processed.

1. WHY ENVIRONMENTAL AUDITS?

There were principally three reasons for the Swedish utilities to start this Customer Oriented Environmental Audit:

- Swedish and International large electricity consumers require environmentally acceptable electricity production;
- There is political pressure to demonstrate that nuclear power is environmentally acceptable and the nuclear fuel cycle is in focus;
- Swedish Nuclear Power Plants want to adhere to Environment Management Systems such as ISO 14001 and/or EMAS, and then they must be assured of an acceptable environmental status of their suppliers.

2. THE ORGANIZATION

The Nuclear Fuel and Environmental Project has a Steering Group with members from the Swedish utilities. The Chairman is Mr. Stig Sandklef, Vattenfall Fuel. NFE has a small secretariat, now two people. When a team is selected, usually specialists from the Swedish utilities participate together with one or two independent specialists. A normal team is around five people.

3. THE PROCEDURE

The procedure for an NFE Environmental audit is:

- criteria are sent to the Supplier Company;
- written answer are sent to NFE;
- Swedish team verifies the environment by visiting the facility, discussions with the company's specialists in environment and work environment including radiation safety, and discussions with regulatory authorities;
- a preliminary report is written, sent to the company for checking;
- a final report is written.

4. THE CRITERIA

The NFE criteria have been developed from the ISO 14001 criteria, however these are not sufficient. We want also to include work environment and radiation safety. The criteria have

been discussed with utilities, industrial organizations and regulatory authorities in Sweden, as well as with international organizations such as The Uranium Institute (UI) and International Atomic Energy Agency (IAEA).

In addition, NFE requests data such as emissions to air and water and radiation doses to personnel.

The criteria comprise the following areas:

- international standards;
- national laws;
- permissions (licences, authorizations);
- environmental policy;
- implementation of environmental policy;
- work environment including radiation safety;
- treatment of chemicals;
- waste, mill tailings;
- annual report, environment;
- incidents;
- decommissioning and restoration.

5. THE ENVIRONMENTAL AUDIT

The environmental audit is carried out in accordance with the standards ISO 14010, ISO 14011 and ISO 14012, with the addition that NFE also takes contact with regulatory authorities to listen to their views. The team carrying out the verifying visit comprises about five people. The team usually includes specialists in environmental management systems, work environment and radiation protection. The team includes specialists from the utilities as well as independent specialists. The teams comprise different specialists for each environmental audit.

The final reports are delivered to the Swedish utilities. As the utilities finance the audits, the reports are their property. A typical report is 30–50 pages including annexes. The reports comprise all the elements for judgment if a company has an adequate environmental level for supplying uranium or nuclear fuel cycle services to the Swedish utilities. Each individual utility judges if the environmental level is adequate.

If a utility should find that the environmental level from one supplier is not adequate, this will certainly not be announced internationally. However the utility will discontinue purchasing from that supplier.

6. EXPERIENCES

The NFE has up till now carried out the following environmental audits in accordance with the procedure:

<i>Company</i>	<i>Facility</i>	<i>Activity</i>	<i>Country</i>
Priargunsky Mining	Krasnokamensk ¹	Uranium	Russia

¹ In co-operation with the Swedish Radiation Protection Institute.

ERA	Ranger	Uranium	Australia
Rio Tinto	Rössing	Uranium	Namibia
Elektro Chemical Plant	Zelenogorsk	Enrichment	Russia
Navoi Complex	Uchkuduk etc.	Uranium ISL	Uzbekistan
ABB ATOM	Västerås	Fuel Fabrication	Sweden

In addition, NFE also reviewed environmental issues at the uranium mines Key Lake in Canada and Olympic Dam in Australia.

The following environmental audits are in process:

BNFL	Springfields	Conversion	United Kingdom
URENCO	Capenhurst	Enrichment	United Kingdom
COMURHEX	Malvesi, Pierrelatte	Conversion	France

7. COMMUNICATION WITH THE PUBLIC

Obviously NFE answers questions from the public in Sweden about the environment at uranium mines and fuel cycle facilities. As Sweden has no operating uranium mines, there is nobody else to answer such questions.

The Information Centers at the Nuclear Power Plants are interested in the NFE Project, as they often have visitors asking questions about uranium, conversion, enrichment and nuclear fuel fabrication. NFE has started to produce short versions of the environmental reports – four pages in Swedish language – for distribution to interested visitors.

NFE also has translated the Uranium Institute's UI FACTS to Swedish on "Safety and Environmental Issues in Uranium Mining and Milling, Conversion, Enrichment and Fuel Fabrication", produced by the Uranium Institute SEA Working Group.

8. THE FUTURE

The "Nuclear Fuel and Environment Project" started formally on 1st January 1997, although we commenced some activities earlier. It is an example of a "Customer Oriented Environmental Audit".

The Criteria and the procedure are still being developed. We are trying to learn from our own experience as well as from others.

The Finnish Utility TVO recently decided to join the environmental audit of URENCO Enrichment Facility at Capenhurst and the COMURHEX' Conversion Facilities at Narbonne and Pierrelatte, and we hope that this co-operation will continue.

NFE still has to carry out environmental audits at several companies that supply uranium, conversion, enrichment or fuel fabrication for the Swedish utilities – and in addition there is an interest of the Swedish utilities to carry out environmental audits at potential suppliers.

The NFE experience up till now is that all suppliers we have asked to participate in this Environmental Audit Procedure have co-operated very well. Actually, now several new potential suppliers are interested in NFE coming to them to perform an environmental audit of their facility.