FEDERAL ENVIRONMENTAL, INDUSTRIAL AND NUCLEAR SUPERVISION SERVICE OF RUSSIA
(ROSTECHNADZOR)

Fukushima Lessons Learnt and Follow-up Activities of Rostechnadzor

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Main Fukushima Lessons Learnt at a National Level

- need to improve designs of new NPPs;
- need to upgrade the operating NPPs;
- improvement of national emergency response systems;
- updating of the existing legal framework, review of regulatory documents;
- more open, trust-based and closer cooperation on safety-related issues;
- introducing – at a national level – the agreements reached within international cooperation.

Stress tests of Russian operating NPPs

March – April 2011 – inspections of operating NPPs conducted by the Russian operator and regulator independently of each other with a special focus on:

- robustness against natural and man-induced impacts, including those exceeding the design basis, and various combinations of external effects;
- preparedness of the NPPs for managing beyond design basis accidents with blackout;
- preparedness of the NPPS for managing beyond design basis accidents with the loss of ultimate heat sink; and
- preparedness for managing severe accidents.

Stress Tests of Russian operating NPPs

Emergency drills based on scenarios with blackout and ultimate heat sink loss at all the Russian NPPs.

June 2011 – development by Rostechnadzor of requirements to the stress tests of operating NPPs on the basis of the approaches suggested by WENRA.

August 2011 - submission of stress tests' results to Rostechndazor by the Russian operator (Concern Rosenergoatom).

Rostechnadzor's reviews of these results.

December 2011 - discussions of the regulator and the operator at an extended session.

Main Conclusions of Stress Test Reviews

- Compliance of operating NPPs with the current safety regulatory requirements.
- Adequacy of short-, medium- and long-term actions on NPP safety improvement developed by the Russian operator.
- Need to update the Russian nuclear safety regulatory framework.

Stress Tests Follow-up Activities

Development of an action program to improve operating NPPs safety by the operator and control of its implementation by Rostechnazdor:

- all the NPPs have received mobile emergency equipment (portable diesel generators, motor pumps and mobile pump sets);
- the emergency drill plans were complimented with a new scenario of a plant beyond design basis accident with simultaneous operation of all available mobile emergency equipment units (such as diesel generators, diesel pumps and motor pumps);
- an emergency shutdown system in case of a seismic event has been introduced at Novovoronezh 4 & 5;
- general technical requirements to mobile control points of the NPP emergency managers and rescue managers have been developed; and
- procedures for severe accident management for Balakovo 4 has been developed.

Stress Tests of New Russian NPPs

April 2011 – Rostechnadzor's review of stress tests reports for 11 NPP Units under construction performed by the operator.

Review results:

- analysis of the Fukushima lessons by the utility as regards the new NPP units followed by a series of relevant actions;
- appropriate modifications to the new NPP designs;
- additional technical features to be introduced into the new NPP designs.

Improvement of the National Nuclear Legislation and Regulatory Framework

Major amendments introduced into the Federal Law “On the Use of Atomic Energy”:

- the definition of the basic principles and tasks of legal regulation in the field of atomic energy use is now in compliance with the principles of the international law and clauses of the conventions the Russian Federation is part of;
- an institution of an "authorized safety regulatory body" with a number of exclusive powers has been introduced;
- the status of the federal standards and rules which set forth safety requirements in the field of atomic energy use has been enhanced;
- liability for violation of the law in the field of atomic energy use has been increased.

Improvement of the National Nuclear Legislation and Regulatory Framework

Areas for the updating of the Russian Regulatory Framework:

- setting requirements to special procedures for severe accident management;
- setting requirements to consideration of external natural and man-induced impacts, including their combinations, in the NPP designs in the process of siting;
- setting requirements to the content of safety analysis reports.

Improvement of the Rostechnadzor Emergency Capabilities

- Upgrading Rostechnadzor's Informational and Analytical Center;
- providing a possibility to perform an accident analysis independently form the operator;
- reporting to the Government of the Russian Federation and Rostechnadzor management;
- communicating with the public.

International cooperation

Early 2012 – development and approval of the Action Program of Russian Authorities and Organizations Concerned in Implementation of the IAEA Action Plan on Nuclear Safety.

Exchange of information on NPPs stress tests results with foreign partners:

- July 2012 - Moscow: Rostechnadzor – ASN Workshop with participation of Russian and French operators;
- November 2012 - Helsinki: Rostechnadzor – STUK Workshop;
- July 2013 – Paris: Follow-up Moscow Workshop with participation of Russian and French regulators and operators.

MAIN OUTCOMES

1. **Performance of systematic activities in the light of Fukushima lessons:**

- the action plan to enhance the robustness of the Russian nuclear plants against extreme external impacts and improve preparedness for accident management is being implemented;
- the regulatory framework is being improved;
- actions on improving the regulator's preparedness for acting under accident conditions are being taken.

2. **Development, approval and realization of the Action Program of Russian Authorities and Organizations Concerned in Implementation of the IAEA Action Plan on Nuclear Safety.**

3. **Implementation of active international cooperation on Fukushima lessons learnt.**

Thank your for your attention!