

Fukushima a disaster «*Made in Japan*» (05 July 2012)

The faults of every player in last year's Fukushima crisis have been laid out by a parliamentary commission. No organization was singled-out as responsible - but rather Japanese culture itself.

The report published today comes from Japanese Diet's Fukushima Nuclear Accident Independent Investigation Commission, one of three bodies investigating the circumstances of the accident. The 88-page executive summary elaborated in detail the organizational, cultural and technical failings that allowed the accident to occur, as well the issues that stymied the country's response.

While it must be remembered that the Fukushima accident was directly caused by the enormous Tohoku earthquake and Tsunami of 11 March 2011, the commission report pointedly dubbed it 'man-made'.

Chairman Kiyoshi Kurokawa's foreword explained: ***"What must be admitted – very painfully – is that this was a disaster «Made in Japan». Its fundamental causes are to be found in the ingrained conventions of Japanese culture: our reflexive obedience; our reluctance to question authority; our devotion to «Sticking with the program»; our groupism; and our insularity."***

The mindset of government and industry led the country to avoid learning the lessons of the previous major nuclear accidents at **Three Mile Island** and **Chernobyl**, wrote Kurokawa.

"The consequences of negligence at Fukushima stand out as catastrophic, but the mindset that supported it can be found across Japan. In recognizing that fact, each of us should reflect on our responsibility as individuals in a democratic society."

Opportunities missed

Long before the natural disasters, the report said, improvements had been identified for Fukushima Daiichi that would have protected the plant or helped during an emergency. Some of these had been recommended but **not required** by the regulator **NISA**, and **TEPCO** had **not implemented** them on its own volition by the time of the natural disasters.

Principal among these were, of course, **Tsunami and flood mitigation**. **TEPCO** had been aware since 2006 that Fukushima Daiichi could face a station blackout if inundated with water, as well as the potential loss of ultimate heat sink if a Tsunami came that exceeded the Japan Society of Civil Engineers' official estimation. However, **NISA** gave **no instruction** to the company to prepare for severe flooding, and even told all nuclear operators that it was **not necessary** to plan for **station blackout**.

During the initial response to the Tsunami, this lack of readiness for station black-out was compounded by a **lack of planning and training** for severe accident mitigation. Plans and procedures for venting and manual operation of isolation condensers were **incomplete** and their implementation in emergency circumstances proved very difficult as a result.

NISA also had a **"negative attitude" to learning from its peers overseas**. The commission said that the Fukushima accident **"may have been preventable"** if **NISA** had set new requirements similar to those brought in by its US equivalent after the terrorist attacks of 11 September 2001.

"We have concluded that - given the deficiencies in training and preparation - once the total station black-out occurred, including the loss of a direct power source, it was impossible to change the course of events", said the commission.

Poor coordination

At the national level, plans and procedures were similarly underdeveloped, untested and unknown. **NISA** had been central to the overall plan for handling nuclear emergencies but failed to respond adequately, while **the cabinet did not understand its own role** in the plan and began to communicate directly with **TEPCO** - cutting **NISA** out of the loop.

This continued to the point that a cabinet team with **"no legal authority"** was established at **TEPCO's** Tokyo headquarters, to which **TEPCO** eventually **"became subordinate"**. The operator's absolute responsibility for matters on site was not officially specified and **TEPCO** became "reluctant" to assert it, **"prioritising the cabinet's intent over that of the technical engineers at the site"**. Meanwhile, the **"unprecedented intervention"** of a personal visit by prime minister **Naoto Kan** to Fukushima Daiichi distracted workers and confused the chain of command even further.

NISA was also criticised for its **"negligence and failure over the years"** to prepare for a nuclear accident in terms of **public information** and **evacuation**, with previous governments equally culpable. Most residents within 10 kilometers of the power plant only learnt of the crisis when ordered to evacuate - some 12 hours after the official notification of an emergency situation, itself delayed by cabinet confusion.

What comes next?

The commission concluded that **"the safety of nuclear energy in Japan and the public cannot be assured unless the regulators go through an essential transformation process. The entire organization needs to be transformed, not as a formality but in a substantial way. Japan's regulators need to shed the insular attitude of ignoring international safety standards and transform themselves into a globally trusted entity."**

Furthermore, **"Mechanisms must be established to ensure that the latest technological findings from international sources are reflected in all existing laws and regulations."** The regulatory body must be monitored by the Diet, which would be supported by an independent **expert panel** with a global view.

Among several recommendation areas, relating to regulation, crisis management and legal frameworks, only one relates to the performance of the nuclear utilities. It specifies that the government's relationship to a nuclear operator must be controlled by rules and openly disclosed. **TEPCO**, and by extension all Japanese nuclear operators, must **"undergo dramatic corporate reform, including governance, risk management and information disclosure with safety as the sole priority."** Japanese operators must also **"construct a cross-monitoring system"** to maintain safety standards at the highest global levels.

Kurokawa noted that there were many lessons relating to policies and procedures, **"but the most important is one upon which each and every Japanese citizen should reflect very deeply... The consequences of negligence at Fukushima stand out as catastrophic, but the mindset that supported it can be found across Japan. In recognizing that fact, each of us should reflect on our responsibility as individuals in a democratic society."**

Researched and written by World Nuclear News