

Nuclear Equipment and Japan's Nuclear Regulatory Approach

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Babcock and Wilcox (B&W)

- B&W is a leading global energy technology company that designs, builds, and services power plants, and power plant equipment world-wide.
- B&W has built and designed nuclear reactors, reactor equipment, and nuclear fuel since the dawn of the nuclear age.
- B&W has designed and built nuclear reactors for research, maritime, commercial, and space applications.
- B&W is responsible for the nuclear operations at many Department of Energy sites, including Pantex, Y-12, Los Alamos, Livermore, Oak Ridge, Idaho National Laboratory, WIPP, Advanced Waste Treatment Plant, and others.
- B&W has built 305 Replacement Steam Generators over the last 15 years, and over 1400 heavy components since the start of the nuclear age.
- B&W employs 12,000 to 14,000 nuclear workers, and operates in multiple regulatory environments.
- B&W just received the support of the U.S. Dept of Energy for its small modular reactor program, mPower.
- B&W designed and built Three Mile Island (TMI) 1 and 2.



US/Japan Partnerships

GOVERNMENT PARTNERSHIP

- The United States and Japan are global leaders in the nuclear industry and have an important partnership in the same.
- It is important to maintain the US/Japan leadership, which is a strong model for how nuclear power and nuclear non-proliferation should be implemented.

TECHNOLOGY PARTNERSHIPS

- Japan has partnered with US companies to develop and deploy reactor technologies:
 - Toshiba and Westinghouse
 - Hitachi and GE

EQUIPMENT PARTNERSHIPS

- Japan Steel Works
- Sumitomo Metal
- Many others

WHEN IT COMES TO NUCLEAR POWER, JAPAN IS NOT AN ISLAND NATION



Nuclear Safety Culture

Japan is not alone in experiencing a nuclear incident or in examining nuclear regulatory and operating systems.

Recovering from an incident and changing your Nuclear Safety Culture is extremely difficult to do.

The Japanese nuclear industry and its existing regulatory structure must be open, honest and very self-critical, as people work to rebuild trust.

A Nuclear Safety Culture can not be achieved by stringent standards alone.

A Nuclear Safety Culture is a recognition that neither people or organizations are infallible, and often make mistakes.

A Nuclear Safety Culture requires that organizations and individuals remain constantly vigilant for “error precursors,” such as fatigue or over-confidence.

A Nuclear Safety Culture is not limited to nuclear plant operators.



Japan's Nuclear Regulatory Approach

Japan has made great strides in standing up a Nuclear Regulation Authority (NRA).

Japan's progress has been made in a very difficult environment.

The strongest regulatory approach focuses on nuclear plant operations and the entire nuclear supply chain. Significant failures have recently occurred in the supply chain and this is a primary focus of the US NRC.

To be “the” technical authority, requires broad technical expertise. NRA needs to rapidly increase technical competence in multiple fields to provide a broad-based regulatory environment.

The strongest regulatory approach is both standards based (deterministic) and Probability Risk Assessment (PRA) based, a combination that works against complacency.



Responsibility and Nuclear Regulation Authority (NRA)

There is currently no clear path forward on who will authorize restarts of nuclear reactors in Japan.

A consensus approach is inconsistent with a “Nuclear Regulation Authority (NRA),” and invites significant ongoing problems with the path forward.

NRA needs to be truly independent to have credibility.

Having to rely on appropriations for funding of ongoing operations can erode independent authority, and politicize nuclear safety.

Local government and public participation should be wrapped into the NRA process, and not an independent hurdle, which can be politicized, and impact nuclear safety.

Judging whether nuclear safety standards are met should be the exclusive purview of NRA. Any other approach dilutes NRA and can create conflicting focus by nuclear operators and manufacturers.



International Cooperation and Standards

Japan has understandably been focused inward following the triple disaster.

Increasing use of international companies and technological approaches will speed the clean-up at Fukushima, and improve credibility.

International participation needs to be more than advice and guidance to be successful – it must be long term presence and assistance that leverages the existing workforce and accelerates all aspects of recovery and clean-up.

Japan is in a unique position to ask the international community to establish meaningful standards for community clean-up, acceptable levels of contamination, and appropriate radiological releases that carefully balance public safety with real risk.

Japan is also in a position to ask for, and will benefit from substantial international help in the Fukushima clean-up.

International standards and cooperation will help the Japanese community with credibility and trust.



The Mansfield Report

The Mansfield Foundation, the Federation of American Scientists, and the Sasakawa Peace Foundation convened the U.S. – Japan (post Fukushima) Nuclear Working Group in 2011.

The group produced a “Statement on Shared Strategic Priorities in the Aftermath of the Fukushima Nuclear Accident,” earlier this year.

The report can be accessed at www.mansfieldfdn.org



Thank You

