Who bears the cost of a nuclear accident?

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The events at Tokyo Electric Power Company's (Tepco) Fukushima Daiichi plant resulting from the March 11 earthquake and tsunami are likely to have a lasting impact on the nuclear power industry worldwide, including the United States. In the weeks immediately following the earthquake and tsunami, the events at Fukushima Daiichi captured the headlines as company management and Japanese government leaders struggled to assess the situation and secure the plant in a controlled shutdown of the reactors. With the potential "worst-case scenario" averted, the nuclear industry and public policy makers began the process of evaluating the technical challenges and public policy issues related to the accident. From an investor's standpoint, the most immediate question is, "How does a company deal with the financial impact of a nuclear accident?"

The financial outlook for Tepco is uncertain. The company participates in an insurance pool that provides coverage of up to $1.47 billion for a nuclear accident. Cost estimates for the liability and cleanup at the Fukushima Daiichi site continue to increase, with estimates as high as $35 billion. Under Japan's Act on Compensation for Nuclear Damage (Act of 1961), the operator of a nuclear facility is not responsible for damages if an accident is triggered by "a grave natural disaster of an exceptional character." Therefore, private insurance may not cover accidents related to earthquakes and tsunamis.

If the Japanese government decides that the Fukushima Daiichi accident does indeed fall under the Act of 1961, Tepco could be exempt from liability, meaning that the total $35-billion cost would have to be picked up by the government. If Tepco is not exempted, insurance may cover up to $1.47 billion, with the rest of the cost falling on Tepco. If the total liability were to fall on the company, it would have to undergo a financial restructuring and most likely would need significant financial support from the government.

In the United States, nuclear plant operators are required by the Nuclear Regulatory Commission under 10 CFR Part 50.54(w) to maintain a minimum of $1.06 billion of property insurance per reactor site. The rule stipulates that following a nuclear accident, insurance proceeds must be payable first for the costs associated with the stabilization of the reactor and next for the costs associated with the decontamination of the reactor and the reactor site. Any remaining proceeds can then be used to offset property damage.

Nuclear Electric Insurance Limited (NEIL), established in 1973 as an alternative to the commercial insurance market, is a mutual insurance company that insures every commercial nuclear plant in the United States. Members must have (or have had) an insurable interest in a nuclear power plant. In addition to providing coverage to U.S. companies, NEIL has a Dublin, Ireland–based subsidiary—Overseas NEIL Limited—that currently insures nuclear power plants in Belgium and Spain.

NEIL insurance provides accidental property damage and decontamination coverage with a maximum policy limit of $2.75 billion, and accidental outage coverage, which is similar to commercial business interruption coverage, up to $4.5 million per week, with a maximum limit available of $490 million. At year-end 2010, the largest claim paid by NEIL was $388 million, and the claim was still open.

While NEIL provides property insurance for U.S. nuclear plant operating companies, liability insurance is provided under the Price-Anderson Act (PAA), enacted in 1957 and designed to ensure that adequate funds are available to satisfy liability claims of members of the public for personal injury and property damage in the event of a nuclear accident at a commercial nuclear power plant. The PAA mandated financial protection for commercial nuclear facilities and established a liability regime for the victims of nuclear incidents.

The PAA requires operators to have two layers of insurance coverage. The primary layer, $375 million, is provided by American Nuclear Insurers, a pool of investor–owned stock insurance companies. The average annual premium for a single-unit reactor site is $400 000; the premium per reactor is discounted somewhat for multireactor sites.

The second layer, up to about $12.6 billion, is jointly provided by all U.S. reactor operators. In the event of an accident with damages in excess of $375 million, each licensee would be assessed a prorated share of the excess up to $111.9 million. If the second tier is depleted, Congress must decide how additional compensation is provided. Coverage under the PAA includes the transport of nuclear fuel to and from reactor sites, as well as the storage of nuclear fuel or waste at a site.

To date, U.S. insurance pools have paid over $150 million in claims and litigation costs, about $71 million of which were associated with the 1979 Three Mile Island accident.

Once the situation at Fukushima Daiichi is completely under control and assessments can be made regarding the cost liabilities to Tepco and the Japanese government, the experience gained there should provide a useful metric for evaluating the insurance programs in place in the United States. ■