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PROPOSED NRC RULE WOULD PERMIT NUCLEAR POWER PLANTS TO CHANGE ACCIDENT ANALYSES OF PUBLIC RADIATION DOSE

The Nuclear Regulatory Commission has proposed amendments to its regulations that would permit nuclear power plant licensees to take advantage of updated research findings on estimated public radiation doses from reactor accidents.

The revised rule would permit them to use what is known as a revised "source term" for the accident analysis on which plant design and operations are based. NRC believes this change could reduce unnecessary burdens on many licensees without compromising public health and safety, reduce worker radiation exposure, and improve overall safety.

"Source term" is the technical name for the calculation of the speed, magnitude and chemical form in which the radioactive material produced by the atom-splitting process in a nuclear reactor would be released from the reactor into the containment building if an accident occurred.

Nuclear power plants use the source term for analyzing possible accident consequences -- including potential radiation dose to the public from leakage out of the containment into the environment -- and factor that analysis into plant design and operation.

All currently operating nuclear power plants were licensed on the basis of a source term published in 1962 by the Atomic Energy Commission, NRC's predecessor agency. That procedure assumed an immediate release of radioactive materials to the containment during a severe accident, including a substantial amount of radioactive iodine which could cause thyroid cancer.

But the experience of the Three Mile Island accident in 1979, in addition to research which followed it, suggests that a release into the containment would not be immediate, but a phased release. Revised source terms published by NRC in 1995 reflected this experience and research.

The proposed rule, which is being issued for public comment, would permit utilities with nuclear power plant operating licenses to replace the 1962-era source term in their licenses with the revised one. It is expected that such a change could cut down

on occupational radiation exposures in such activities as the installation of charcoal filters, maintenance of certain containment isolation valves, and repairs to systems to maintain leak-rate limits which are overly restrictive in light of the recent research. The proposed rule, however, is not intended to provide licensees with relief from the NRC's emergency planning requirements.

Cutting back on such unnecessary work also could lead to cost savings. Improvements in overall safety are also likely, due to, for example, reduction in the loading of emergency diesel generators. Licensees who wanted to continue with their present source term could do so. The NRC staff's recent approval of the Westinghouse AP 600 advanced reactor design was based in part on the revised source term.

Comments are due no later than May 25. More details are available in a notice published in today's edition of the Federal Register. The rule and associated documents also are available for public inspection and copying for a fee at the NRC Public Document Room, 2120 L Street N.W., Washington, DC. The telephone numbers are 202/634-3273 and 800/397-4209.

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