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OPENING REMARKS
by Ashok C. Thadani
27th Annual Water Reactor Safety Meeting

Good morning! My name is Ashok Thadani and I am the Director of the Office of Nuclear Regulatory Research at the Nuclear Regulatory Commission.

The Office of Nuclear Regulatory Research conducts independent experiments and analyses, develops technical bases for realistic safety decisions, and prepares the agency for the future by evaluating safety issues involving current and new designs and technologies. This meeting is very important in that it facilitates the exchange of information about research programs and provides an opportunity for interactions with stakeholders and professional networking, and in this light I welcome you all to the 27th Annual Water Reactor Safety Meeting (WRSM-27). Welcome to a forum designed to facilitate open dialogue and specific discussions on a range of nuclear safety research issues from both domestic and foreign perspectives. With the number and frequency of changes taking place both inside the NRC and external to the NRC, it is especially important that we fully utilize this opportunity to continue discussions of key safety issues.

I am particularly looking forward to this year's plenary sessions on "The Impact of Emerging Technologies on Nuclear Safety Research" and "How Best to Focus Both on Safety and Unnecessary Burden Reduction - The Research Role." We are fortunate to have the presence of world-class experts to guide us into more meaningful dialogue on these topics.

WRSM-27 brings together international and domestic expertise to hear progress reported and debate the degree of rigor and robustness in the scientific knowledge and technical basis for the findings and conclusions being presented. The knowledge and basis that are up for debate here are those that transcend organizations and even national boundaries. This meeting will focus on subjects such as risk-informed regulation, enhancements to regulatory effectiveness, the integrity of primary coolant pressure boundaries, the behavior of high-burnup and mixed-oxide fuels, the effects of burnup on criticality determinations, improved accident fission product source terms for operating reactors, and improved cognizance of new technologies.

During this year the Center for Strategic and International Studies (CSIS) examined the regulatory process for nuclear power plants and made recommendations throughout its report. CSIS study report and their Chairman, John Ahearne's, summary to the Commission emphasized the need for research. Current industry gains such as the technical basis for risk-informed regulation and the resolution of license renewal issues came from past NRC investments in research efforts in areas such as those used to develop Probabilistic Risk

Analysis (PRA) methods beginning in the 1980s and those used to understand the effects of aging on plant systems, structures and components in the 1990s. Basically, unless sufficient resources are put into research now, future gains are not likely to be realized.

Yet, there has been a continued decline in resources which has led to the loss of research facilities, strong technical capability and leadership. This raises questions about the preparations for future challenges. With the continued decline in resources, our initiatives in cooperative research have become increasingly important to the overall regulatory research program.

The nuclear industry is recognized as a world industry and cooperative research is a cornerstone to leverage research resources and support basic nuclear capabilities. The NRC conducts research in partnership with DOE, EPRI, and more than 60 countries. Much of the research is concentrated in the areas of severe accidents, thermal-hydraulics, fuel behavior, PRAs, piping integrity and material research. Examples of how well this is done are reflected in the ROSA large-scale Test Facility in Japan for safety system testing, the work to develop advanced methods of pressure vessel fracture, and advanced predictions of pressure vessel fracture. Other examples include the Cabri Reactor in France and the NSRR reactor in Japan that are providing much of the needed data in the area of assessing fuel behavior under high burn-up accident conditions. So really, this is not just a USNRC meeting gathering of some of the most talented people in the world.

This year the meeting has a new format to promote more dialogue on safety research with the stakeholders in commercial nuclear applications. Safety research develops and confirms technical bases related to the public health and safety mission and our related strategic goals. The two themes of our meeting flow from these goals. The first theme focuses on research aimed at facilitating risk-informed regulation and reducing unnecessary burdens on industry and regulators. The focus of the second theme is to improve awareness of operating experience and our response to emerging issues.

The Office of Nuclear Regulatory Research has several self-assessment initiatives as part of the NRC's strategic performance goal of improving the effectiveness, efficiency, and realism of decisions and activities. For WRSM-27, we have engaged assistance to help us evaluate the effectiveness of this meeting and the direction the WRSMs should be going. You are the important part of the corporate wisdom for the evaluation of this meeting. We need your full participation in this evaluation as it occurs throughout the meeting. Please extend that extra effort needed to provide us your feedback. Later, the Office's Deputy Director, Margaret Federline, will discuss the changes in format for the meeting and our expectations for the evaluation.

Now, I am privileged to introduce Commissioner Jeffrey S. Merrifield, our keynote speaker. Before joining the NRC, Commissioner Merrifield had served since 1995 as Counsel and Staff Director to the Senate Subcommittee on Superfund, Waste Control and Risk Assessment. From 1992 to 1995, he was an associate with the Washington, D.C., law firm of McKenna & Cuneo. From 1990 to 1992, he served as a legislative assistant to Senator Robert C. Smith, and from 1987 to 1990 as a legislative assistant to then Senator Gordon J. Humphrey.

A native of Antrim, New Hampshire, Commissioner Merrifield received his Bachelor of Arts degree, magna cum laude, in political science and history from Tufts University in 1985 and his Doctor of Jurisprudence degree from Georgetown University Law Center in 1992. We are privileged to have him with us today to share his thoughts on nuclear regulatory research.