NUCLEAR REGULATORY COMMISSION
NUREG-1855,
"GUIDANCE ON THE TREATMENT OF UNCERTAINTIES ASSOCIATED WITH PRAs IN RISK-INFORMED DECISION MAKING, DRAFT REPORT FOR COMMENT"

AGENCY: Nuclear Regulatory Commission.

ACTION: Notice of availability of NUREG-1855, "Guidance on the Treatment of Uncertainties Associated with PRAs in Risk-Informed Decision Making, Draft Report for Comment," and request for public comment.

SUMMARY: The Nuclear Regulatory Commission (NRC) is announcing the availability of and is seeking comments on NUREG-1855, "Guidance on the Treatment of Uncertainties Associated with PRAs in Risk-Informed Decision Making, Draft Report for Comment."

DATES: Comments on this document should be submitted by March 28, 2008. Comments received after that date will be considered to the extent practical. To ensure efficient and complete comment resolution, comments should include references to the section, page, and line numbers of the document to which the comment applies, if possible.

ADDRESSES: Members of the public are invited and encouraged to submit written comments to Michael Lesar, Chief, Rules and Directives Branch, Office of Administration, Mail Stop T6-D59, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. Hand-deliver comments attention to Michael Lesar, 11545 Rockville Pike, Rockville, MD, between 7:30 a.m. and 4:15 p.m. on Federal workdays. Comments may also be sent electronically to NRCREP@nrc.gov.

This document, NUREG-1855, is available at the Agencywide Documents Access and Management System (ADAMS) Public Electronic Reading Room on the Internet at the NRC Web site at http://www.nrc.gov/reading-rm/adams.html under Accession No. ML072990412 on the NRC Web site http://www.nrc.gov/reading-rm/doc-collections/nuregs/docs4comment.html; and at the NRC Public Document Room, 11555 Rockville Pike, Rockville, MD. The PDR's mailing address is USNRC PDR, Washington, DC 20555; telephone (301) 415-4737 or (800) 397-4205; fax (301) 415-3548; e-mail PDR@NRC.GOV.

FOR FURTHER INFORMATION, CONTACT: Mary Drouin, Division of Risk Assessment, Office of Nuclear Regulatory Research, telephone (301) 415-6675, e-mail mxd@nrc.gov

SUPPLEMENTARY INFORMATION:

NUREG-1855, "Guidance on the Treatment of Uncertainties Associated with PRAs in Risk-Informed Decision Making, Draft Report for Comment." December 2007.

This NUREG provides guidance on how to treat uncertainties associated with probabilistic risk assessment (PRA) in risk-informed decision making. The objectives of this guidance include fostering an understanding of (1) the uncertainties associated with PRA, (2) the impact of the uncertainties on the results of the PRA, and (3) the uncertainties in the context of the decision making. The guidance in this document focuses on the use of PRA insights and results and ways to address the associated uncertainties. Consequently, the scope of the guidance contained in this report is limited to addressing the uncertainties associated with the use of the results of risk models.

In implementing risk-informed decision making, the US Nuclear Regulatory Commission expects that appropriate consideration of uncertainty will be given in analyses and interpretation of findings. Such consideration should include using a program of monitoring, feedback, and corrective action to address significant uncertainties. To meet this objective, it is necessary to

understand the role that PRA results play in the context of the decision process. Defining the context includes providing an overview of the risk-informed decision making process itself.

With the context defined, the characteristics of a risk model and, in particular, a PRA need to be understood. This understanding includes a recognition of the different forms of uncertainty which include aleatory and epistemic. A PRA, as a probabilistic model, already characterizes aleatory uncertainty. The focus of this document is epistemic uncertainty. Therefore, guidance is given on identifying and describing the different types of sources of epistemic uncertainty including the different ways that they are treated. The different types of epistemic uncertainty include parameter, model, and completeness uncertainties.

The final part of the guidance includes addressing the uncertainty in PRA results in the context of risk-informed decision making and, in particular, the interpretation of the results of the uncertainty analysis when comparing PRA results with the acceptance criteria established for a specified application. In addition, guidance is provided for addressing the other elements contributing to completeness uncertainty in risk-informed decision making (e.g., unknown phenomena that have not been recognized or factors that have been identified but for which there is no agreed on method for addressing them in PRAs).

The Electric Power Research Institute (EPRI), in parallel with the NRC, has been developing guidance documents on the treatment of uncertainties. The activities of the NRC and EPRI are meant to be complementary.

The NRC is seeking public comment in order to receive feedback from the widest range of interested parties and to ensure that all information relevant to developing this document is available to the NRC staff. This document is issued for comment only and is not intended for interim use. The NRC will review public comments received on the document, incorporate suggested changes as necessary, and issue the final NUREG-1855 for use.

Dated at Rockville, Maryland, this 18th day of January, 2008.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

/RA/

Christiana H. Lui, Director
Division of Risk Analysis
Office of Nuclear Regulatory Research