SUNI Review Complete
Template=ADM-013
E-RIDS=ADM-03
ADD: Meraj Rahimi, Michael Eudy, Dawnmathews Kalathiveettil, Kyle Song, Jeanne Johnston, Holly Cruz, Mary Neely

Comment (20)
Publication Date: 8/14/2020
CITATION 85 FR 49685

As of: 9/9/20 1:43 PM
Received: September 09, 2020
Status: Pending_Post
Tracking No. 1k4-9iv1-jh1i
Comments Due: September 14, 2020
Submission Type: API

PUBLIC SUBMISSION

Docket: NRC-2020-0171
Setpoints for Safety-Related Instrumentation

Comment On: NRC-2020-0171-0001
Setpoints for Safety-Related Instrumentation

Document: NRC-2020-0171-DRAFT-0021
Comment on FR Doc # 2020-17763

Submitter Information

Name: Anonymous Anonymous

General Comment

As noted below there is a more stringent regulatory requirement in the reactor area (i.e., guidance document) than the nuclear materials area (i.e., NRC regulation) proposed for licensees and applicants by DG-1141, although Regulatory Guide 1.105, Revision 3 stipulates the same 95 percent probability, 95 percent confidence level criteria as specified in 10 CFR 50.68.

Background Section of NRC Information Notice 2011-03, Nonconservative Criticality Safety Analyses for Fuel Storage, states the following:

Paragraph 50.68(b)(4) of 10 CFR 50.68, Criticality Accident Requirements, requires the following:

If no credit for soluble boron is taken, the k-effective of the spent fuel storage racks loaded with fuel of the maximum fuel assembly reactivity must not exceed 0.95, at a 95 percent probability, 95 percent confidence level, if flooded with unborated water. If credit is taken for soluble boron, the k-effective of the spent fuel storage racks loaded with fuel of the maximum fuel assembly reactivity must not exceed 0.95, at a 95 percent probability, 95 percent confidence level, if flooded with borated water, and the k-effective must remain below 1.0 subcritical), at a 95 percent probability, 95 percent confidence level, if flooded with unborated water.

NUREG/CR-6698, Guide for Validation of Nuclear Criticality Safety Calculational Methodology, January 2001 (Agencywide Document and Management

System (ADAMS) Accession No. ML050250061), provides guidance on determining the bias uncertainty for Monte Carlo codes.

The primary NRC staff guidance regarding the depletion uncertainty is an internal NRC memorandum from L. Kopp to T. Collins, Guidance on the Regulatory Requirements for Criticality Analysis of Fuel Storage at Light-Water Reactor Power Plants, dated August 19, 1998 (ADAMS Accession No. ML003728001) (Kopp Letter). The Kopp Letter is referenced by virtually all spent fuel pool criticality license amendment requests submitted since its issuance.

Regarding the depletion uncertainty, the Kopp Letter states the following:

A reactivity uncertainty due to uncertainty in the fuel depletion calculations should be developed and combined with other calculational uncertainties. In the absence of any other determination of the depletion uncertainty, an uncertainty equal to 5 percent of the reactivity decrement to the burnup of interest is an acceptable assumption.

Although DG-1363 through the endorsement of ANSI/ISA 67.04.01-2018 returned to the Revision 3 criteria for probability and confidence level sought for instrumentation performance, the associated Non-Concurrence statement by a NRC Senior Instrumentation & Control Engineer indicates the desire for a more stringent requirement. Section 2 of DG-1363 should either make the safety case for a more stringent requirement than what is in place for 10 CFR 50.68, Criticality Accident Requirements, or discuss the acceptability of the 5 percent uncertainty.