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U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Attention: Mr. C. H. Berlinger
Chief, Generic Communication Branch

Subject: Revised Hafnium RCCA Examination Guidelines

Dear Mr. Berlinger:

Enclosed is a copy of the newly revised "Hf RCCA Examination Guidelines." The revisions are based on discussions between Westinghouse and various members of the NRC Staff. A draft copy of these revised guidelines was reviewed by the NRC Reactor Systems Branch.

If the Staff does have additional comments regarding the guidelines, we would be happy to discuss them at your convenience.

If there are any questions, please contact Mr. T. A. Lordi of my staff at (412) 374-4311.

Very truly yours,

W. J. Johnson, Manager
Nuclear Safety Department

JSG/wh/0717A

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ATTACHMENT I

January 3, 1990

Hf RCCA EXAMINATION GUIDELINES

The following examination guidelines are provided for plants utilizing full length Hafnium Control rods and are applicable to examinations which occur during a refueling outage beginning after the date of issuance shown above. The NRC has stated that it would be prudent to monitor the condition of the full length Hf RCCAs within the time span covered by the Justification for Continued Operation (JCO). Monitoring the condition of the Hf RCCAs will also allow the utility to take appropriate action to minimize any potential impact on plant operations. Westinghouse believes that such operational impact is unlikely to occur. Additional or more stringent inspection such as eddy current testing may be used in place of these recommendations at the discretion of the utility.

If any anomalous conditions are identified via the examinations, Westinghouse will assess that information in light of the JCO bases and jointly determine with the utility the need for further examination or analysis. Westinghouse will incorporate additional examination data into our Hf information database as it becomes available.

NOTE: The guidelines are applicable if continued use of the Hafnium RCCAs is planned beyond the point in time of the specific examination. If any Hafnium RCCAs assemblies are discharged due to an anomalous condition, and no dimensional measurements have been performed on that RCCA, video examination of the tips, and to the extent practical, the remaining length of the anomalous RCCA should be performed.

At Each Refueling Outage Subsequent to the Issuance of These Guidelines

I. Perform one of the following inspections, A or B:

A. 1. Video examination of the rodlet tips of ~25% of the RCCAs with video resolution that allows identification of geometrically distorted end plugs, large open cracks, and missing rodlet pieces. Determination of which RCCAs will be video examined is to be based on one of the following two selection criteria:

a. Perform EOC rod drop time test (similar to start-up tests per Technical Specifications focusing on drop time within the dashpot if possible) and examine the ~25% of RCCAs with greatest change in drop time within the dashpot or to the dashpot (compared to BOC).

b. Prior to unlatching of the RCCAs, with the upper internals in place, record maximum drag loads of all RCCAs during at least a 12 inch lift. The ~25% RCCAs with highest drag load should be selected for the video exams.

2. Binocular examination of all remaining RCCAs when they are being shuffled between fuel assemblies during the refueling outage to confirm that rodlets are intact and no other gross defects exist (i.e., no missing pieces or severed rodlets).

[- or -]

B. Complete (100%) video examination of all rodlet tips (at least bottom 4-8 inches) and full length video examination of ~25% of the rodlets. The resolution of the video examination shall be such that it allows identification of geometrically distorted end plugs, large open cracks, and missing rodlet pieces. The examination will also be used to confirm that no new or unexpected conditions exist.

II. If any anomalous conditions are identified during the refueling outage due to:

1. insertion and/or removal difficulty encountered during shuffling of Hf RCCAs between Fuel Assemblies, or

2. individual EOC drag forces that deviate from the average drag force recorded for the remaining RCCAs by $\pm$100 pounds while the tips are in the dashpot region (if performed per item I.A.b of these guidelines), or

3. abnormally high EOC measured drop times of Hf RCCAs, (if performed per item I.A.a, of these guidelines),

then, a video examination should be performed of the Hf RCCA(s) which exhibited the anomalous condition. Complete (100%) video examination of all rodlet tips and to the extent practical, the entire length of the rodlets on the anomalous RCCA should be performed for the purpose of helping determine if the anomaly is caused by Hf hydriding.

Operation Beyond the JCO Time Span

The JCO covers operation through the equivalent of 3 cycles of 18 calendar months* each. Operation beyond that time would have to be justified prior to such operation. Westinghouse believes that this would require acceptance by the NRC in a time frame consistent with plant schedules and that, as a minimum, the following inspection would be necessary.

Perform a detailed characterization of all hafnium RCCA rodlets. This would include both dimensional and video examination methodologies. The data would be reviewed to confirm characterization that no new or unexpected conditions exist, and that continued operation through the subsequent cycle or cycles may be justified.

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* The JCO considered 54 months at hot operating conditions. Therefore, total calendar time variations of at least 10% were considered and are within the evaluation envelop of the JCO.