RESOLUTION OF COMMENTS ON DRAFT SAFETY EVALUATION FOR

TOPICAL REPORT WCAP-16045-P-A, AND WCAP-16045-NP-A,

ADDENDUM 2, REVISION 0,

"UPDATED NEXUS CROSS-SECTION METHODOLOGY"

WESTINGHOUSE ELECTRIC COMPANY

EPID L-2019-TOP-0026

WESTINGHOUSE ELECTRIC COMPANY

By letter dated June 18, 2020 (Agencywide Documents Access and Management System Accession No. ML20121A306), Westinghouse Electric Company (Westinghouse) provided comments on the draft safety evaluation (SE) for Topical Report (TR) WCAP-16045-P-A, Addendum 2, Revision 0, and WCAP-16045-NP-A, Addendum 2, Revision 0, "Updated NEXUS Cross-Section Methodology." Westinghouse stated that there is proprietary information in the draft SE. The following is the U.S. Nuclear Regulatory Commission (NRC) staff's resolution of these comments:

Draft SE comments for TR WCAP-16045-P-A, Addendum 2, Revision 0, and WCAP-16045-NP-A, Addendum 2, Revision 0:

1. Fifth sentence of the first paragraph of Section 4.2, "Qualification of Single Assembly Model Calculations," reads in the draft SE:

   The following lattices were evaluated:

   - Westinghouse-type 17x17 OFA assembly, 5.0 w/o ^{235}U, 156 1.5x integral fuel burnable absorber (IFBA), 24 wet annual burnable absorber (WABA)
   - Westinghouse-type 14x14 assembly, 4.0 w/o ^{235}U, 64 IFBA
   - Westinghouse-type 15x15 assembly, 4.5 w/o ^{235}U, 116 IFBA
   - Combustion Engineering-type 16x16 assembly, 4.2 w/o (average), 16 6 w/o Gd_2O_3 rods
   - Westinghouse-type 17x17 standard-size fuel rod assembly, 4.95 w/o ^{235}U, 48 IFBA
   - Westinghouse-type 17x17 OFA assembly, 2.6 w/o ^{235}U

Westinghouse proposed to replace “annual” with “annular,” so the sentence would read:

> The following lattices were evaluated:
>
> - Westinghouse-type 17x17 OFA assembly, 5.0 w/o ^{235}U, 156 1.5x integral fuel burnable absorber (IFBA), 24 wet annular burnable absorber (WABA)
> - Westinghouse-type 14x14 assembly, 4.0 w/o ^{235}U, 64 IFBA
> - Westinghouse-type 15x15 assembly, 4.5 w/o ^{235}U, 116 IFBA
> - Combustion Engineering-type 16x16 assembly, 4.2 w/o (average), 16 6 w/o Gd_2O_3 rods
> - Westinghouse-type 17x17 standard-size fuel rod assembly, 4.95 w/o ^{235}U, 48 IFBA
> - Westinghouse-type 17x17 OFA assembly, 2.6 w/o ^{235}U

NRC Resolution for Comment 1 on Draft SE

The NRC staff has reviewed the Westinghouse comment and agrees that proposed wording provides additional clarification. The NRC staff has updated the second sentence of the first paragraph of Section 4.2, “Qualification of Single Assembly Model Calculations.”

2. Westinghouse suggested replacing “pcm” with “, i.e. 0.3%,” in the fifth sentence of the sixth paragraph in Section 4.2, “Qualification of Single Assembly Model Calculations.”

   NRC Resolution for Comment 2 on Draft SE

   The NRC staff has reviewed Westinghouse comment and agrees that proposed wording provides additional clarification. The NRC staff has replaced “pcm” with “, i.e. 0.3%,” in the fifth sentence of the sixth paragraph in Section 4.2, “Qualification of Single Assembly Model Calculations.”

   Fifth sentence of the sixth paragraph in Section 4.2, “Qualification of Single Assembly Model Calculations,” now reads:

   > The comparisons included both rodded and unrodded cases. For the unrodded case, calculated at a burnup of 20000 MWD/MTU, the maximum difference between improved NEXUS/ANC and the current NEXUS/ANC is 0.003, i.e. 0.3%, occurring at the edge of the lattice.

3. Last sentence of the second paragraph of Section 4.3, “Qualification of Minicore Model Calculations,” reads:

   > In the absence of actual plant data, NEXUS/ANC has not been approved for MOX or non UO_2 fueled reactors.

   Westinghouse suggested to re-word the sentence to clarify it.

NRC Resolution for Comment 3 on Draft SE

The NRC staff agrees that clarification is needed. The NRC staff re-worded last sentence of the second paragraph of Section 4.3, “Qualification of Minicore Model Calculations,” which now reads:

> While the models discussed above used MOX fuel as an extreme example of a neutronically dissimilar fuel assembly, the NRC staff expects that any use of the NEXUS methodology in licensing applications involving MOX fuel would utilize the update process described in the TR and RAI responses.

4. Westinghouse provided proprietary markings on the draft SE.

   NRC Resolution for Comment 4 on Draft SE:

   The NRC staff reviewed the Westinghouse markings and incorporated them into the final SE.

5. Westinghouse provided editorial comments.

   NRC Resolution for Comment 5 on Draft SE:

   The NRC staff reviewed editorial comments provided by Westinghouse and finds them acceptable because the changes are editorial in nature.