

**RESOLUTION OF COMMENTS ON DRAFT SAFETY EVALUATION FOR**  
**WESTINGHOUSE ELECTRIC COMPANY**  
**TOPICAL REPORTS WCAP-17503-P/WCAP-17503-NP, REVISION 1,**  
**“WESTINGHOUSE GENERIC SETPOINT CONTROL PROGRAM RECOMMENDATIONS”**  
**AND WCAP-17504-P/WCAP-17504-NP, REVISION 1, “WESTINGHOUSE GENERIC**  
**SETPOINT METHODOLOGY”**  
**PROJECT NO. 700**

By letter dated August 17, 2016, Westinghouse Electric Company (Westinghouse) provided comments on the draft safety evaluation (SE) for Topical Reports (TRs) WCAP-17503-P/NP, Revision 1, “Westinghouse Generic Setpoint Control Program Recommendations” and WCAP-17504-P/NP, Revision 1, “Westinghouse Generic Setpoint Methodology.” Some information in the draft SE for these TRs was identified as proprietary; therefore, the draft SE will not be made publicly available. The following are the U.S. Nuclear Regulatory Commission (NRC) staff’s resolution of these comments:

Draft SE comments for TRs WCAP-17503-P/NP, Revision 1, “Westinghouse Generic Setpoint Control Program Recommendations” and WCAP-17504-P/NP, Revision 1, “Westinghouse Generic Setpoint Methodology:”

1. The first paragraph on page 9 states:

In this evaluation, the NRC staff evaluates the setpoint analysis methodology and assumptions of WCAP-17504-P/WCAP-17504-NP, Revision 1, to confirm that an acceptable analysis method is used and that the analysis parameters and assumptions are consistent with the safety analysis, system design basis, TS, plant design, and expected maintenance practices. The following factors were considered in the review:

Westinghouse requested a clarification regarding the applicability of the SE.

NRC Resolution for Comment 1 on Draft SE:

The NRC staff has reviewed the Westinghouse comment and agrees with this comment. The NRC staff has updated the paragraph to clarify the SE’s applicability. The first paragraph on page 9 now reads:

In this evaluation, the NRR staff evaluates the setpoint analysis methodology and assumptions of WCAP-17504-P/WCAP-17504-NP, Revision 1, for any new safety related setpoints or setpoint changes

for the reactor types and functions listed above that will be submitted to NRR as license applications or amendments, to confirm that an acceptable analysis method is being used and that the analysis parameters and assumptions are consistent with the safety analysis, system design basis, TS, plant design, and expected maintenance practices. The following factors were considered in the staff's review:

2. Westinghouse noted that AP1000® is a registered trademark of Westinghouse.

NRC Resolution for Comment 2 on Draft SE:

The NRC staff reviewed the Westinghouse comment and finds it acceptable. Trademark was inserted.

3. The last paragraph on page 12 of draft SE reads:

The staff notes that Westinghouse does not employ the concept of a "Limiting Trip Setpoint" (LTSP) that is separate and distinct from a "Nominal Trip Setpoint" in its application of the methodology for RTS or ESFAS trip functions, as described in the ISA 67.04 Standard, and as is frequently employed in other licensee or vendor setpoint methodology programs approved by the NRC. Instead, the WSM ensures that the TA between the SAL and the NTS is inclusive of all CSA errors plus an extra non-zero margin.

Westinghouse proposed the following change to the last paragraph on page 9:

The staff notes that Westinghouse does not employ the concept of a "Limiting Trip Setpoint" (LTSP) that is separate and distinct from a "Nominal Trip Setpoint" in its application of the methodology for RTS or ESFAS trip functions, as described in the ISA 67.04 Standard, and as is frequently employed in other licensee or vendor setpoint methodology programs approved by the NRC. Instead, the WSM ensures that the TA between the SAL and the NTS is inclusive of all CSA errors with a non-negative margin, i.e.,  $\geq 0\%$  span. The staff agrees that estimating individual uncertainty terms on a 95/95 basis or as bounding allowances provides sufficient assurance for protecting the analytical limit; hence, the safety limit will be protected as well.

NRC Resolution for Comment 3 on Draft SE:

The NRC staff reviewed the Westinghouse comment and finds it acceptable because the suggested revision clarifies the staff scope and context of the staff review. The NRC staff agrees that such revision is consistent with the staff's review findings and provides additional clarification. The last paragraph was changed to read:

The staff notes that Westinghouse does not employ the concept of a "Limiting Trip Setpoint" (LTSP) that is separate and distinct from a "Nominal Trip Setpoint" in its application of the methodology for RTS or ESFAS trip functions, as described in the ISA 67.04 Standard, and as is frequently employed in other licensee or vendor setpoint methodology programs approved by the NRC. Instead, the WSM ensures that the TA between the SAL and the NTS is inclusive of all CSA errors with a non-negative margin, i.e.,  $\geq 0\%$  span. The staff agrees that estimating individual uncertainty terms on a 95/95 basis or as bounding allowances provides sufficient assurance for protecting the analytical limit; hence, the safety limit will be protected as well.

4. Westinghouse asked to remove second sentence in the fifth paragraph on page 15 of draft SE.

NRC Resolution for Comment 4 on Draft SE:

The NRC staff reviewed the Westinghouse comment and finds it acceptable because the suggested revision clarifies the staff scope and context of the staff review. The NRC staff agrees that such revision is consistent with the staff's review findings of the Revision 1 to WCAP-17504-P/NP. The second sentence in the fifth paragraph on page 15 was removed. The fifth paragraph on page 15 now reads:

Although the NRC staff notes that this method requires more calibration process effort than is currently considered normal practice for most plants, if performed properly the method is considered conservative, in that it has the benefit of improving safety through better maintenance of safety related instrument channel calibration settings and trip setpoints, and will enable the plant to experience fewer spurious protection system or ESF system actuations. If the three passes up and down method of calibration is employed, the band of data recorded at each calibration ordinal point should be tighter, while sufficiently accounting for the effects of sensor reference accuracy.

5. Third paragraph reads:

It's the NRC staff understanding of Westinghouse statement above that for future applications and license amendments where

the applicant or licensee adopts both the Westinghouse Setpoint Methodology and the Westinghouse SCP Recommendations, some licensees may propose to revise their plant-specific TSs to remove references to use of the “Allowable Value” term for the specific functions covered by this methodology and consistent with the scope of LSSS identified in the TSTF-493 Traveler package described above. If it is found that an instrument channel has exceeded the AFT value, the channel is inoperable. In addition, those plants adopting TSTF-493 Option B will remove the setpoints from the TSs altogether, and place them into a licensee-controlled document consistent with the TSTF-493 Option B provisions.

Westinghouse requested the change to the first sentence to read: “...adopts the Westinghouse Setpoint Methodology or both the Westinghouse....”

NRC Resolution for Comment 5 on Draft SE:

The NRC staff reviewed the Westinghouse comment and finds it acceptable because the suggested revision clarifies the staff scope and context of the staff review. The NRC staff agrees that such revision is consistent with the staff’s review findings and provides additional clarification. The third paragraph was changed to read:

It’s the NRC staff understanding of the Westinghouse TSTF-493 Option B statement above that for future applications and license amendments where the applicant or licensee adopts the Westinghouse Setpoint Methodology or both the Westinghouse Setpoint Methodology and the Westinghouse SCP Recommendations for TSTF-493 Option B submittals, licensees may propose to revise their plant-specific TSs to remove references to use of the “Allowable Value” term for the specific functions covered by this methodology and consistent with the scope of LSSS identified in the TSTF-493 Traveler package described above. If it is found that an instrument channel has exceeded the AFT value, the channel is considered inoperable. In addition, those plants adopting TSTF-493 Option B will remove the setpoints from the TSs altogether, and place them into a licensee-controlled document consistent with the TSTF-493 Option B provisions.

6. Westinghouse provided a comment asking to add the following language to the beginning of the last paragraph of Section 3.1.2:

The Westinghouse Setpoint Methodology does not support the concept of “Allowable Value” for TS operability determination. Therefore an “Allowable Value” is not calculated or determined from values used in the Channel Statistical Allowance (CSA) equation.

NRC Resolution for Comment 6 on Draft SE:

The NRC staff reviewed the Westinghouse comment and finds it acceptable because the suggested revision clarifies the staff scope and context of the staff review. The NRC staff agrees that such revision is consistent with the staff's review findings and provides additional clarification. The last paragraph of Section 3.1.2 was changed to read:

The Westinghouse Setpoint Methodology does not support the concept of "Allowable Value" for TS operability determination. Therefore an "Allowable Value" is not calculated or determined from values used in the Channel Statistical Allowance (CSA) equation. The NRC staff requested Westinghouse to provide clarification regarding how licensees would implement the Westinghouse AFT values if they choose to retain the "Allowable Value" term values currently published in their plant-specific TSs of their current licensing basis. In a closed meeting held on September 16, 2015, at the NRC Headquarters between Westinghouse representatives and NRC staff, the Westinghouse representatives stated that the value corresponding to the AFT term would be used for determining whether the channel was "performing as expected." If the as-found value for the instrument channel was found during a calibration surveillance to be outside of this AFT, but more conservative than the TS Allowable Value, the surveillance information for that channel would include a notation that the channel was able to be reset to within the ALT, and the channel was to be placed into a corrective action program, for which calibration results would be trended and an evaluation would be made concerning whether instrumentation within the channel should be considered for replacement with new equipment of the same type. If the calibration surveillance information revealed that the Allowable Value was exceeded, the channel would be declared INOPERABLE after evaluation of the data, and corrective action would be taken immediately to restore the channel to Operable status.

7. Westinghouse provided the following comment on the last paragraph of Section 3.1.8:

Westinghouse interprets that this condition will be satisfied by making available to the NRC the requested information; however, the information does not need to be submitted to be placed on the plant docket.

NRC Resolution for Comment 7 on Draft SE:

The NRC staff reviewed the Westinghouse comment. The NRC staff revised the last paragraph of Section 3.1.8 to clarify staff's position. The last paragraph of Section 3.1.8 now reads:

The NRC staff notes that if the WSM is to be used in conjunction with any license amendment requests to implement WCAP-17504-P/WCAP-17504-NP, Revision 1, on plants with non-Westinghouse NSSS vendor specified equipment, the NRC staff should verify through an audit of the licensee's data analysis that the licensee has confirmed with the individual equipment vendors that the reference accuracy, drift, and other instrument channel component performance uncertainties have been estimated at the 95/95 two-sided statistical level. If the licensee has not been successful in confirming the vendor data was presented as 95/95 data, then the NRC staff should ensure through a review of evaluations conducted by the licensee (or Westinghouse, on behalf of the licensee) that the available vendor data has been appropriately adjusted so that it is representative of high confidence (i.e., 95/95) information.

8. Westinghouse provided a comment on last three paragraphs of Section 3.2 asking to remove the last three paragraphs of that section.

NRC Resolution for Comment 8 on Draft SE:

The NRC staff reviewed the Westinghouse comment. The NRC staff modified the text in last three paragraphs of Section 3.2 to delete portions of the text not needed, or consistent with guidance already publically available via the TSTF process, in order to clarify staff's position. The last paragraph of Section 3.1.8 now reads:

The maintenance of the SCP is a continuous configuration management process that must keep up with changes in the plant licensing basis and physical configuration. The licensee's submittal for approval of a TSTF-493 Option B SCP should conform to the guidance contained in the staff's January of 2013 *Federal Register* Notice of Availability Supplement to NRC-2009-487, "NRC Staff Guidance for License Amendment Requests to Implement a TSTF-493 Option B Setpoint Control Program" (ADAMS Accession No. ML12342A157).

9. Westinghouse provided a comment asking to change the words in draft SE "...their plant specific setpoint methodology" to "...their plant specific setpoint control program" in the second sentence of the third paragraph in Section 3.2.5.

Licensees or applicants must describe how the elements of the Westinghouse Generic Setpoint Methodology has been incorporated into their plant-specific setpoint methodology, but do not need to describe in detail the algorithms and terms used, unless there are any differences from those outlined in WCAP-17504-P/WCAP-17504-NP, Revision 1.

NRC Resolution for Comment 9 on Draft SE:

The NRC staff reviewed the Westinghouse comment. The NRC staff revised the text in the second sentence of the third paragraph in Section 3.2.5 to clarify staff's position. The second sentence of the third paragraph in Section 3.2.5 now reads:

If a licensee maintains an overall corporate, fleet-wide, or plant-specific setpoint methodology, licensees or applicants must describe how the elements of the Westinghouse Generic Setpoint Methodology have been incorporated into their formal setpoint methodology and/or setpoint calculation procedures, but do not need to repeat in detail the WSM algorithms and terms used, unless there are any differences from those outlined in WCAP-17504-P/WCAP-17504-NP, Revision 1.

10. Westinghouse provided proprietary markings on the draft SE.

NRC Resolution for Comment 10 on Draft SE:

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