TEXAS UTILITIES SERVICES INC.
2001 BRYAN TOWER · DALLAS, TEXAS 75201

Log # TXX-3316
File # 903

May 8, 1981

Mr. Spottswood Burwell
U. S. Nuclear Regulatory Commission
Licensing Project Manager
Light Water Reactors Branch No. 2
Division of Project Management
Office of Nuclear Reactor Regulation
Washington, D.C. 20555

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION
MEB SER MINUTES

Dear Mr. Burwell:

Attached are six copies of minutes of the meetings held at New York and Pittsburgh on April 6th through April 10th, attended by the NRC, Gibbs & Hill, Westinghouse and Texas Utilities for the purpose of resolving open items listed in the Mechanical Engineering Branch Draft Safety Evaluation Report (SER).

All revised FSAR sections referenced in the minutes have been issued as of the Amendment 20 issuance date.

Items prefixed with the letter "B" refer to BOP scope (i.e. primarily Gibbs & Hill). Items prefixed with the letter "N" refer to NSSS scope (i.e. primarily Westinghouse).

Should you have any questions please contact me at 214-653-4871.

Sincerely,

J. S. Marshall

BSD:tls
Attachment
cc: R. E. Ballard
A. T. Parker
J. T. Merritt
R. D. Calder
R. A. Jones

B001
S. 1/1

8105120259
A

Minutes of the CPSES Mechanical Engineering Branch
Draft SER Review held in New York and Pittsburgh
on April 6 through April 10

Item B1 (SER PG 3, Item 3.6B.2 (II.1)

FSAR Section 3.6B.3.5 has been revised to clarify the subject equation.

Item B2 (SER PG 3, Item 3.6B.2 (II.2))

FSAR Section 3.6B.3.1.1 has been revised to amplify the criteria used to postulate cracks in moderate energy piping.

Item B3 (SER PG 4, item 3.6B.2)

The status of the in progress high energy line break analyses was described. The information provided in the FSAR, albeit preliminary, was satisfactory. This item will be resolved upon completion of the analyses.

Item B4 (SER PG 4, Item 3.6B.2)

The NRC clarified their concern to pertain to the 0.5 uniform ultimate strain requirement specified in SRP Section 3.6.2. FSAR Section 3.6B.3.6 adequately addressed this concern and this item was resolved.

Item B5, B6, and B7 (SER PG 9/10, Item 3.7B.3.1(1), (2), & (3))

FSAR Section 3.7B.3.1 has been revised to clarify the seismic analysis methods and to verify compliance with the SRP criteria.

Item B8 (SER PG 10, Item 3.7B.3.2)

FSAR Section 3.7B.3.2 has been revised to include SSE maximum stress cycles.

Item B9 (SER PG 10, Item 3.7B.3.3)

FSAR Section 3.7B.3.3 has been revised to include a description of the procedures used for modeling the dynamic analysis of complex systems.

Item B10 (SER PG 10, Item 3.7B.3.5)

FSAR Section 3.7B.3.5 has been revised to clarify the conditions under which the Equivalent Static Load Method of Analysis can be used.

Item B11 (SER PG 10, Item 3.7B.3.7)

FSAR Section 3.7B.3.7 has been revised to clarify the methods used to combine modal responses.

Item B12 (SER PG 11, Item 3.7B.3.8(1))

FSAR Section 3.7B.3.8.1 has been revised to discuss seismic relative motion of piping that does not leave the building.

Item B13, B14, B15, B16, and B17 (SER PG 11, Item 3.7B.3.8(2), (3), (4), (5), (6))

FSAR Section 3.7B.3.8.1.1 has been revised to include a detailed description of the Simplified Design Method. Further clarification and documentation of verification was presented at the meeting. The meeting discussions and the revised FSAR section satisfactorily

resolved these items.

Item B18 (SER PG 12, Item 3.7B.3.8(7))

FSAR Sections 3.7B.3.8.1 and 3.7B.3.8.3 concerning piping analysis have been revised to provide additional information in the areas of; degrees of freedom, sufficiency of number of modes used, and relative displacements between supports.

Item B19 (SER PG 12, Item 3.7B.3.9)

The resolution of this item is the same as Item B12.

Item B20 and B21 (SER PG 12, item 3.7B.3.13)

FSAR Section 3.7B.3.13.2 has been revised to include a description of the design of Seismic Category I piping with adjacent Non-Category I piping.

Item B22 (SER PG 15, Item 3.9B.1)

FSAR Section 3.9B.1.4.2 has been revised to clarify the combined shear and tension allowables for anchor bolt material.

Item B23 (SER PG 16/17, Item 3.9N.2.1 and 3.9B.2.1)

FSAR Sections 3.9N.2.1 and 3.9B.2.1 have been revised to address items 1.a thru 1.f of the SRP.

Item B24 (SER PG 21, Item 3.9B.3.1(1))

FSAR Section 3.9B.3.1.1 has been revised to clarify and define the normal, upset, emergency and faulted conditions.

Item B25 (SER PG 21/22, Item 3.9B.3(2))

FSAR Tables 3.9B-3A, 1B, 1C, 1D, 1E, 2, 3, 4, 5, and 6 have been revised and renumbered to delineate the loading combinations and stress limits for ASME III Class 2 and 3 piping for all plant conditions.

Item B26 and B27 (SER PG 22/23, Item 3.9B.3.(B) and 3.9B.3.2)

FSAR Section 3.9B.3.2 has been revised to clarify the acceptance criteria used to assure pump and valve operability.

Item B28, B29 and B30 (SER PG 24, Item 3.9B.3.3(1), (2), and (3))

FSAR Section 3.9B.3.3 has been revised to amplify the description of the design and installation criteria applicable to mounting pressure relief devices.

Item B31 (SER PG 25, Item 3.9.3.4(3))

Safety class hangers, restraints and anchors are designed to the requirements of section NF of the ASME Section III Code. The specification stipulates the requirements for design, selection of material, fabrication and testing to quality assurance standards meeting the 10CFR50 Appendix B requirements.

The load combinations and stress limits specified in FSAR tables 3.9B-1 are invoked in the hanger specification.

Qualified vendor organizations performing under contract with the applicant provide the designs to the requirements of the above specification. Welding, fabrication procedures, quality assurance manual, typical stress reports, etc. are reviewed by the

Architect-Engineer for compliance with the project requirements. However, the details of each design including the support calculations are design reviewed by the qualified personnel within the respective design organizations. Design review of safety class equipment is performed by the Architect-Engineer to ensure compliance with design specifications.

Field changes resulting in design modification are reviewed and approved by the representatives of the original design organization.

An as-built verification of all safety class supports against the final design loads will be performed to meet the requirements specified in IE Bulletin 79-14.

Typical auxiliary feedwater and ECCS pipe support design review calculations will be submitted to the NRC for review.

Item B32 (SER PG 25, Item 3.9.3.4(4))

TXX-3301 dated April 13, 1981 responded to the Robert Tedesco letter of January 14, 1981 concerning preservice inspection and testing of snubbers. FSAR Section 14.2 has been revised to include the preoperational test requirements.

Item B33 (SER PG 28, Item 3.9.6)

An inservice pump and valve testing program that meets the NRC requirements will be provided within six months of the anticipated date of commercial operation.

The Robert L. Tedesco letter of November 17, 1980 concerning inservice inspection of reactor coolant isolation valves was responded to by our

letter TXX-3241 of December 8, 1980. The inservice inspection requirements associated with these valves will be addressed in the inservice inspection plan which is to be submitted within six months of commercial operation.

Item N1 (SER PG 2, Item I(1))

FSAR Table 3.6B-3 has been completed. This table identifies stresses and fatigue cumulative usage factors and compares the Comanche Peak analysis moment loadings with those presented in the reference analysis (WCAP-8082). Preliminary analysis results confirm applicability of the reference analysis for the Comanche Peak application. The completion of FSAR Table 3.6B-3 resolves this item.

Item N2 (SER PG2, Item I(2))

This item was discussed in detail and resolved based on discussions on specific plant time history LOCA analysis performed for Comanche Peak. It was noted that the equipment and piping displacements presented in WCAP-8082 are not intended to represent limiting or umbrella values to be met in plant specific analysis. Displacements of equipment and ruptured piping were explicitly accounted for in the dynamic time history analysis performed for the Comanche Peak plant. Additionally, it was noted that RCS component support design and analysis is Westinghouse's responsibility, thus eliminating external design interfaces in this area.

Item N3 (SER PG 2, Item I(3))

Sketches of Reactor Coolant Loop pipe whip restraints are currently provided in FSAR figure 5.4-16 through 5.4-19, thus resolving this item.

Item N4 (SER PG 2/3)

FSAR Section 3.6B.2.3.1 has been revised to examine the effect of evaluating jet thrust forces for RCS breaks at 102 percent power or hot standby conditions (which ever represents the limiting condition for the break being evaulated). The analysis demonstrates that the existing installation adequately accomodates these conditions.

Item N5 (SER PG 6, Item 3.7N.3.1(1))

Westinghouse made a formal presentation on the seismic analysis method utilized for the Comanche Peak plant. FSAR Section 3.7N.2.1 has been revised to provide clarification of the quasi-static method of seismic analysis used for limited flexible components. Additional information on seismic method used to qualify specific equipment was previously provided to the staff per letter TXX-3295, dated April 2, 1981 in response to the NRC Seismic Qualification Review Team's request. The presentation and the subsequent discussions addressed staff concerns. The revision of FSAR Section 3.7N.2.1. resolves this item.

Item N6 (SER PG 6, Item 3.7N.3.1(2))

This item was resolved on the basis that Westinghouse equipment is rigidly mounted and in no instance is mounted on flexible civil structures. Therefore, torsional, rocking, and translational responses are not applicable to Westinghouse equipment.

Items N7 and N8 (SER PG 6, Item 3.7N.3.1(3) and 3.7N.3.1(4))

For flexible equipment Westinghouse utilizes many degrees of freedom (e.g. 200 for steam generators) in their dynamic analysis models. It was noted that Westinghouse assures that a sufficient number of modes

is considered in the anlaysis, consistant with SRP 3.7.2. Westinghouse also provided test results which support their modeling techniques (e.g. for the Reactor Coolant System, NRC Docket 50-206, April 24, 1977, "San Onofre Nuclear Generating Station Seismic Re-evaluation and Modifications," and additional data on tanks, valves, and typical piping systems).

For auxiliary mechanical equipment with natural frequencies below 33 Hz, test results were presented to support the number of modes considered in the analyses.

Based on these discussions, items N7 and N8 were resolved.

Item N9 (SER PG 9, Item 3.7N.3.1(5))

It was noted that Westinghouse had no analysis responsibility for piping or equipment interconnected between buildings. It was noted that Gibbs and Hill's response to Item B12 indicated that relative anchor motions within respective buildings are insignificant. Consequently, this item was resolved.

Item N10 (SER PG 5, Item 3.7N.3.1(6))

Effects such as piping interactions (e.g., nozzle loads, valve-extended structures), externally applied structural restraints (e.g., pipe whip restraints), hydrodynamic loads (e.g., sloshing), and non-linear responses (e.g., modeling and analysis of the Reactor Coolant System) are accounted for in seismic analysis methods. Examples of how such effects were included in seismic analyses were reviewed by the Staff and discussed in detail. Based on the above this item was resolved.

Item N11 (SER PG 7, Item 3.7N.3.1(7))

Westinghouse provided justification for use of the equivalent static load method. This justification consisted of review of test results on tanks and heat exchangers (WCAP-9478), a paper prepared by Dr. C. W. Lin, "A Justification of the Static Coefficient of 1.5 For Equipment Seismic Qualification" (presented at the 1980 Knoxville ANS Conference), and preliminary results of a study which demonstrated that the equivalent static load method was conservative relative to the response spectrum method for equipment qualification. In addition, Westinghouse reviewed the dynamic analyses for CPSES auxiliary components by the equivalent static analyses method and verified that the second mode frequencies are significantly greater than 33 Hz for all components. This item was resolved based on these discussions.

Items N12 and N13 (SER PG 7, Item 3.7N.3.3)

Since all Westinghouse auxiliary equipment is rigidly mounted no decoupling criteria is required. For the reactor coolant loop (RCL) analysis, the effects of primary equipment are included in the integrated RCL model. Additionally, separate detailed analyses are performed for each component. Based on the above this item was resolved.

Item N14 (SER PG 7, Item 3.7N.3.4)

Westinghouse presented the analysis and testing methods used to determine natural frequencies. (See response to items N7 and N8). On this basis, Item N14 was resolved.

Item N15 (SER PG 7, Item 3.7N.3.4)

Rigid equipment/support behavior is accounted for with static analysis methods. Resonant equipment/support behavior is accounted for by dynamic analysis methods. Flexible equipment/support behavior is not applicable to Westinghouse equipment. FSAR Section 3.7N.2.1 has been revised to clarify this item.

Items N16 and N17 (SER PG 8, Item 3.7N.3.5)

The resolution of these items is the same as that described for Item N11.

Item N18 (SER PG 8, Item 3.7N.3.6)

Westinghouse noted that time history seismic analysis was not used for Comanche Peak. Therefore, this item is resolved.

Item N19 (SER PG 8, Item 3.7N.3.7)

The method used by Westinghouse for combination of closely spaced modes has been previously accepted by the NRC as an acceptable alternative to Regulatory Guide 1.92. On this basis Item N19 was resolved.

Item N20 (SER PG 8, Item 3.7N.3.8)

The Westinghouse seismic analysis methods for Class 1 piping and attached non-Class 1 piping up to the first anchor, component, or penetration were discussed relative to items N5-N11 as follows:

a. N5 - All piping in Westinghouse scope is analyzed using response spectra methods.

b. N6 - Westinghouse supplied information on modeling of valves and primary equipment in piping systems demonstrating how such effects as torsion, rocking, and translation are accounted for in piping analysis.

c. N7 and N8 - Westinghouse discussed the method utilized in piping analysis for determining degrees of freedom and mode shapes. Dr. Lin's paper, "How to Lump the Masses" currently referenced in FSAR Section 3.7N.4 is the basic reference used by Westinghouse. Additionally, test data was presented to support the Westinghouse analytical modeling techniques.

d. N9 - See response to Item N9.

e. N10 - Piping seismic/non seismic interactions were previously addressed by Gibbs and Hill (Item B7). Westinghouse discussed how such effects as externally applied structural restraints and non-linear responses were accounted for in piping analysis. For example, the treatment of gapped pipe whip restraints was discussed. Additionally, the nonlinear characteristics of the RCS supports were discussed in detail. Hydrodynamic loads (e.g., water hammer) are not applicable to piping analyzed by Westinghouse.

f. N11 - It was noted that the equivalent static load method is not used by Westinghouse for piping analyses.

Based on the above discussions and examples reviewed by the Staff, Item N20 was resolved.

Item N21 (SER PG 9, Item 3.7N.3.9)

See Item N9 for resolution.

Item N22 (SER PG 9, Item 3.7N.3.14)

The analysis methods for reactor internals were discussed in detail. FSAR Section 3.7N.3.14 has been revised to specifically describe analysis methods including hydrodynamic mass effects, how RCS piping is considered in the analysis, as well as other aspects of the seismic analysis. Based upon the above discussion and the FSAR revision this item is resolved. (For CRDM's, see Items N49 and N50.)

Item N23 (SER PG 9, Item 3.7N.3.14)

A discussion of the analysis models used was presented. Additionally, Figures 3.7N-4 and 3.7N-5 have been provided in the FSAR to illustrate the typical mathematical models used for reactor internals. On this basis, Item N23 is resolved.

Item N24 (SER PG 9, Item 3.7N.3.14)

Westinghouse utilizes the damping values in Regulatory Guide 1.61, 2 percent for the OBE and 4 percent for the SSE. These damping values are included in the revision to the FSAR Section 3.7N.3.14. On this basis, Item N24 is resolved.

Item N25 (SER PG 14, Item 3.9N.1)

The WESAN Code was not used for Comanche Peak and has been deleted from FSAR Section 3.9N.1. On this basis Item N25 is resolved.

Item N26 (SER PG 14, Item 3.9N.1)

Treatment of the horizontal thermal displacement of the RPV nozzle in the RCL analysis was discussed. FSAR Section 3.9N.1.4.3 has been revised to specifically address this point. Based on the above, this item is resolved.

Item N27 (SER PG 14, Item 3.9N.1)

FSAR Section 3.9N.1.4.3 has been revised to correct the equation for $T_{21}(t)$. It was noted that this was an typographical error and that the correct equation was used in the analysis.

Item N28 (SER PG 14, Item 3.9N.1)

The stress criteria in FSAR Section 3.9N.1.4.7 have been revised to demonstrate compliance with Appendix F with the exception of Item b below. Specifically, the following was noted:

a. The elastic system analysis and components inelastic analysis option was not used for Comanche Peak and has been deleted from FSAR Section 3.9N.1.4.7.

b. The component test load method was used to qualify the RPV support shoes and nozzle support pads. A discussion has been added to the FSAR to expand upon this method.

c. The FSAR has been revised to indicate that the component support buckling allowable load is in complete compliance with the ASME Code Appendix F criteria.

This item is resolved by the revision to FSAR Section 3.9N.1.4.7.

Item N29 (SER PG 14, Item 3.9N.1)

The additional information requested by NRC Question 112.25 has been submitted via Amendment 13 to the FSAR. The only outstanding item is submittal of summaries of stress results for the reactor coolant loop piping, reactor coolant loop supports, CRDM's, and Class I branch lines. This information will be provided upon completion of the as-built reconciliation. Upon submittal of this information Item N29 will be resolved.

Item N30 (SER PG 18, Item 3.9.2.2)

A correlation between CPSES vibration predictions and prototype testing was discussed in detail. The prototype plant for Comanche Peak is Indian Point Unit 2. This plant was fully instrumented and tested during hot functional and initial startup testing. Data applicable to Comanche Peak were also obtained from tests on the Trojan 1 and Sequoyah 1 plants. FSAR Section 3.9N.2.3 has been revised to include Trojan 1 and Sequoyah correlations. The significant differences between Comanche Peak and Indian Point internals are the replacement of the annular thermal shield with neutron panels, modifications resulting from the use 17x17 fuel, and the change to the UHI - style inverted top hat upper internals. Revised FSAR Section 3.9N.2.3 addresses the correlation between Comanche Peak and Indian Point internals vibration testing. The revision of FSAR Section 3.9N.2.3 resolves Item N30.

Item N31 (SER PG 18, Item 3.9.2.2)

No corrective actions are required for Comanche Peak as a result of the Trojan and Sequoyah evaluations. This item is resolved.

Item N32 (SER PG 19/20, Item 3.8.2.3)

Westinghouse discussed in detail the blowdown analysis for Comanche Peak internals. Specific points noted were:

(1) As stated in FSAR Section 3.9N.1.4.5 the horizontal and vertical components of the blowdown analysis are coupled at selected points.

(2) Non-linear analysis is used.

(3) Damping values, 4 percent for structural and a conservative 55 percent coefficient of restitution (which is based on published results) for impact damping are acceptable. Gaps used are based on nominal design drawing values.

(4) A discussion outlining the effects of system flow upon mass and flexibility properties is presented in Reference 8 identified in FSAR Section 3.9N.

FSAR Section 3.9N.2.4 has been revised to clarify the above items. On this basis, item N32 is resolved.

Item N33 (SER PG 30, Item 3.9.2.3)

Revised FSAR Section 3.9N.2.4 as described in Item N32 resolves this item.

Item N34 (SER PG 20, Item 3.9.2.3)

The FSAR should refer to FORCE2 in lieu of FORCE. A description and verification of this computer code is contained in Reference 8 (WCAPs

8708/8709) of FSAR Section 3.9N. FSAR Section 3.9N.2.4 has been revised to clarify the reference to this computer code.

Item N35 (SER PG 20, Item 3.8.2.3)

A discussion of reactor internals stresses and deformations was presented. It was indicated that although the Comanche Peak internals are not contractually required to meet ASME Code requirements, essentially all the design and fabrication requirements of Section NG of the ASME Code have been satisfied. Exceptions to code requirements discussed at the meeting are; however, all stresses and deformations are below allowable limits. A statement has been provided in FSAR Section 3.9N.2.4 indicating the differences between the Westinghouse criteria used for Comanche Peak internal and the ASME Code requirements. Additionally, a statement has also been provided in FSAR Section 3.9N.2.4 relative to the acceptability of stresses and deformations for the Comanche Peak internals. Based upon the above, and the revision of Section 3.8N.2.4 of the FSAR, this item is resolved.

Item N36 (SER PG 21, Item 3.9N.3.1(1))

See item B24 for resolution.

Items N37 and N38 (SER PG 21/22, Item 3.8.3.1(2))

Westinghouse described the methods used for combination of responses. For Table 3.9N-2 (Class 1), responses for the design, emergency, and faulted conditions are combined by algebraic summation, with the following exception. Specifically, for the faulted condition, LOCA and SSE are combined by the square-root-of-the-sum-of-the-squares (SRSS) method consistant with NUREG-0484, Rev. 1. The remaining responses

added algebraically to the SRSS result. Normal and upset condition responses are used for fatigue evaluation. Load sets are defined for each transient including the OBE and are combined such that the maximum stress ranges are obtained without regard to the order in which the transients occur. This is further discussed in FSAR Section 3.9N.1.4.3. This position is consistent with NUREG-0484, Revision 1.

For Table 3.9N-4 (Class 2 and 3), responses for all loading conditions are combined by the absolute sum method.

The titles for tables 3.9N-2 and 3.9N-4 have been revised to clearly indicate that pipe supports are not included in either table.

It was noted that reactor coolant loop normal and upset thermal expansion loads are treated as primary loadings for Class 1 component supports, FSAR Section 3.9N.1.4.4 has been revised to reflect this loading condition. Additionally, it was noted that the stress criteria for bolts used in component supports were provided in the Westinghouse position on Regulatory Guide 1.124 which is contained in the Comanche Peak FSAR (Appendix 1A).

Westinghouse also agreed that stress limits for non-Class 1 piping attached to Class 1 piping and extending up to the first anchor, component, or penetration would be provided in the FSAR. Resolution has not yet been reached on what stress criteria would be mutually acceptable to Westinghouse and the Staff.

In summary, Items N37 and N38 are resolved with the above described FSAR revisions, with the exception of a stress criteria for non-Class 1 piping which remains an open item.

Item N39 (SER PG 22, Item 3.8.3.1)

See Item N42 for resolution.

Item N40 (SER PG 22, Item 3.9.3.1(4))

See Item N29 for resolution.

Item N41 (SER PG 22, Item 3.9.3.1)

The representative piping analysis is being performed by ETEC. Consequently, this item does not require a response.

Items N39 and N42 (SER PG 22, Item 3.9.3.1 and 3.9.3.2)

FSAR Section 3.9N.3.2 has been revised to indicate that qualification requirements and acceptance criteria are identified in equipment specifications for active pumps and valves.

Westinghouse noted that acceptance criteria for internal parts of Westinghouse supplied equipment include the yield stress at temperature, design-inherent deflection tolerances, and bearing rated loads.

During the meeting the NRC reviewed equipment specifications for active valves, design reports from an active pump and valve, and valve static deflection test results which were performed as part of the Westinghouse operability program. Full scale dynamic testing (included applied nozzle loads and a flow loop) performed on a high head safety injection pump was discussed.

The seismic qualification of valve appurtenances and pump motors was also discussed. Westinghouse indicated that these items were qualified as part of the generic Westinghouse electrical equipment qualification program as defined in WCAP-8587 and Sections 3.10/3.11 of the FSAR.

Based upon the above discussions and revised FSAR Section 3.9N.3.2 this item is resolved.

Items N43, N44, and N45 (SER PG 24, Items 3.9.3.3(1), 3.9.3.3(2) and 3.9.3.3(3))

Westinghouse discussed in detail the analysis methods used to evaluate pressurizer safety and relief valve discharge piping. Include in this discussion was the fact that actual support stiffnesses provided by Gibbs and Hill are used in the analysis. FSAR Section 3.9N.3.3 has been revised to include a description of the hydraulic and structural analysis methods, loading combinations, various flow conditions (e.g., water slug, two-phase flow), and acceptance criteria. The FSAR revision resolves this item.

Items N46 and N47 (SER PG 25, item 3.9.3.4(1)

Westinghouse does not use component standard supports for the Comanche Peak plant. The reference to component standard supports and MSS-SP-58 has been deleted from FSAR Section 3.9N.3.4. This FSAR revision resolves Items N46 and N47.

Item N48 (SER PG 25, Item 3.9.3.4(2))

See Item N29 for resolution.

Items N49 and N50 (SER PG 26/27, Item 3.9.4)

Information on the seismic analysis, including scram capability of CRDMs has been added to Section 3.9N.4.3.4 of the FSAR. Evaluation of non-pressurized components was satisfactorily addressed based on review of the design specification, discussion of testing performed by Westinghouse and Westinghouse licensees, and the contents of Section 3.9N.4 of the FSAR. It was agreed that information provided in FSAR Section 3.9N.4 adequately addresses fatigue qualification of the CRDMs. The revision of FSAR Section 3.9N.4.3.4 resolves this item.

Item N51 (SER PG 28, Item 3.9.5)

See Item N35 for resolution.

Item N52 (SER PG 28, Item 3.9.5)

See Item N35 for resolution.

Item N53 (SER PG 28, Item 3.9.5)

Table 3.9N-11 was discussed in detail. Actual deflections were reviewed. It was noted that they were well below the allowable values. Based on this discussion Item N53 was resolved.