UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

JUN 10 1985

Docket No. 50-354

MEMORANDUM TO: Central Files

FROM: Walter R. Butler, Chief
Licensing Branch No. 2
Division of Licensing

SUBJECT: HOPE CREEK INDEPENDENT DESIGN VERIFICATION PROGRAM (IDVP) OBSERVATION REPORTS

Since the commencement of the Hope Creek IDVP, a number of observation reports have been generated. Enclosed is a copy of Hope Creek IDVP Observation Reports 1 through 48 and 50.

W R Butler

Walter R. Butler, Chief
Licensing Branch No. 2
Division of Licensing

Enclosure: As stated

Contact: D. Wagner
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James L. Milhoan

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LSP-29
May 8, 1985
Project No. 7212-30

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Independent Design Verification Program
Observation Reports

Mr. W. F. Bauer
Principal Engineer
Public Service Electric and Gas Company
80 Park Plaza
Newark, New Jersey 07101

Dear Mr. Bauer:

Enclosed for your information and action is one copy of Observation Report No. 1 resulting from the IDVP of the Hope Creek Generating Station.

The Observation Report should be reviewed and the Resolution Report sheets completed and signed by Bechtel and PSE&GC and returned as soon as possible. I have enclosed two copies of the Resolution Report sheet forms for your use. Return of original documents should be via Federal Express or equivalent overnight service in order to facilitate S&L's disposition of the Observation Report.

Please note the Internal Review Committee requires additional information (see Item 4 of the Observation Report), which should be included in the Resolution Report, prior to evaluating the safety significance of this observation.

Any questions you or Bechtel may have concerning this observation should be addressed in accordance with the Program Plan Protocol.

Yours very truly,

H. S. Taylor

H. S. Taylor
Chairman, Internal Review Committee

HST:nd
In Duplicate
Enclosures
Copies:
J. P. Milhoan
L. C. Oesterich
P. L. Wattelet
W. A. Bloss (2)
O. Zaben
T. J. Duffy
H. G. L. McCullough
R. M. Schiavoni

ublic Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30
Page 1 of 1

OBSERVATION REPORT

OR No. 1, Rev. 0, Date 5/7/85

1. Structure(s), system(s), or component(s) involved:
   Computer Program: SLAP (Steel Load Analysis Program)

2. Description of Observation: Theoretical manuals are required for all computer programs per the requirements of EDP 4.36.

   A theoretical manual has not been developed for this program used in the final load verification of the structural steel.

3. Significance of Observation:

   The requirements of EDP 4.36 for a theoretical manual have not been followed. The theoretical basis for program is not defined.

4. Recommendation for resolution (optional):
   Provide theoretical basis for SLAP (Steel Load Analysis Program). Review other computer programs used for safety-related work to assure existence of a theoretical manual.

5. Internal Review Committee classification of Observation:
   ____ Not significant to safety (See Item 6)
   __X__ Additional information required (See Item 6)
   ____ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
   Added information required to evaluate safety significance.

7. Internal Review Commitee Signatures:

H. S. Taylor
Chairman

Mechanical Representative

Electrical Representative

Structural Representative

Control and Instrumentation Representative

SARGENT & LUNDY
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LSP-33
May 13, 1985
Project No. 7212-30

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Independent Design Verification Program
Observation Reports

Mr. W. F. Bauer
Principal Engineer
Public Service Electric and Gas Company
80 Park Plaza
Newark, New Jersey 07101

Dear Mr. Bauer:

Enclosed for your information and action is one copy each of Observation Report No's. 2 through 13 resulting from the IDVP of the Hope Creek Generating Station.

The Observation Reports should be reviewed and the Resolution Report sheets completed and signed by Bechtel and PSE&GC and returned as soon as possible. I have enclosed several copies of the Resolution Report sheet forms with Mr. L. C. Oesterich's copy of this letter. Return of original documents should be via Federal Express or equivalent overnight service in order to facilitate S&L's disposition of the Observation Reports.

Any questions you or Bechtel may have concerning these Observation Reports should be addressed in accordance with the Program Plan Protocol.

Yours very truly,

H. S. Taylor

H. S. Taylor
Chairman, Internal Review Committee

HST:nd
Enclosures
Copies:
J. P. Milhoan
L. C. Oesterich
P. L. Wattelet
W. A. Bloss (2)
O. Zaben
W. D. Crumpacker
T. J. Duffy
H. G. L. McCullough
R. H. Schiavoni

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 2, Rev. 0, Date 5/13/8

1. Structure(s), system(s), or component(s) involved:
SACS system cooling water supply valve 1HV-2520B to the RHR pump seals and motor bearings

2. Description of Observation:
Logic diagram J-11-0, sheet 16, Revision 5, dated 4/18/83 shows valve 1HV-2520B incorrectly interlocked to RHR pump A. Logic diagram J-11-0, sheet 1, Revision 9, dated 10/18/84 incorrectly
(continued on next page)

3. Significance of Observation:
Discrepancies on logic diagrams could cause discrepancies in the control schematic development and hardware design.

4. Recommendation for resolution (optional):
Logic diagram J-11-0 sheet 16 should be revised to show the correct RHR pump interlock for valve 1HV-2520B.

(continued on next page)

5. Internal Review Committee classification of Observation:
__x__ Not significant to safety (See Item 6)
_____ Additional information required (See Item 6)
_____ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
The control schematic implemented the required logic for valve 1HV-2520B operation despite the logic diagram discrepancies. The control schematic dictates hardware design.

7. Internal Review Commitee Signatures:

Chairman

Mechanical Representative

Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 2, Rev. 0, Date 5/13/85

2. Description of Observation: (continuation)

references schematic diagram E-0223-0 for the valve 1HV-2520B control circuit.

4. Recommendation for resolution (optional): (continuation)

Logic diagram J-11-0, sheet 1, should be revised to show the correct schematic reference for the valve 1HV-2520B control circuit.

Provide the methodology by which design documents are developed and used to insure that design input is correctly reflected and assurance that this methodology has been applied to all other design documents to correctly reflect design input.

OBSERVATION REPORT

OR No. 3 , Rev. 0 , Date 5/13/85

1. Structure(s), system(s), or component(s) involved:

   Calculation No. C-1750-3Q, dated 2/13/84, Safety Auxiliary Cooling System Piping

2. Description of Observation:

   In Calculation C-1750-3Q, the computer model of line 153-HBC-30, between nodes 435 and 445, uses a wall thickness of 0.750" instead of the 0.375" as specified by Line Index Specification 10855-P-500

(continued next page)

3. Significance of Observation:
   The apparent unreconciled discrepancy will affect the flexibility of this portion of the subsystem and thus may affect the calculated pipe stresses and design loads for anchor 1-P-EG-153-H41 and restraint 1-P-EG-153-H36.

4. Recommendation for resolution (optional):
   a. Provide justification that the discrepancy in the computer model has been reconciled with the design drawing.
   b. Provide assurance that other piping stress analyses have been reconciled with the design drawings.

5. Internal Review Committee classification of Observation:
   _____ Not significant to safety (See Item 6)
   _____ Additional information required (See Item 6)
   _____ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:

   Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. Internal Review Commitee Signatures:

H. S. Taylor
Chairman

Mechanical Representative

Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT OR No. 3, Rev. 0, Date 5/13/85

2. Description of Observation (continuation)

Revision 20, dated 9/13/83. This discrepancy involves eleven feet of 30 inch diameter pipe.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 4 , Rev. 0 , Date 5/13/85

1. Structure(s), system(s), or component(s) involved:
Calculation No. C-1750-3Q, dated 2/13/84, Safety Auxiliary Cooling System Piping.

2. Description of Observation:
In calculation C-1750-3Q, the computer model of line 155-HBC-30, from node 512 through node 520 does not appear to agree with the routing shown on drawing HG-1-P-EG-13, Revision 10D, dated 2/1/84.
(continued on next page)

3. Significance of Observation:
The apparent unreconciled discrepancy may have an effect on calculated pipe stress and calculated loads on anchor 1-P-EG-155-H0 variable support 1-P-EG-155-H01 and restraints 1-P-EG-155-H02, 1-P-EG-155-H03, and 1-P-EG-155-H04.

4. Recommendation for resolution (optional):
   a. Provide justification that the discrepancy in the computer model has been reconciled with the design drawing.
   b. Provide assurance that other piping stress analyses have been reconciled with the design drawings.

5. Internal Review Committee classification of Observation:
_____ Not significant to safety (See Item 6)
__X__ Additional information required (See Item 6)
_____ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
Additional information is required to determine the safety significance of this discrepancy.
Provide information requested in Item 4.

7. Internal Review Commitee Signatures:

H. S. Taylor
Chairman

Mechanical Representative

Electrical Representative

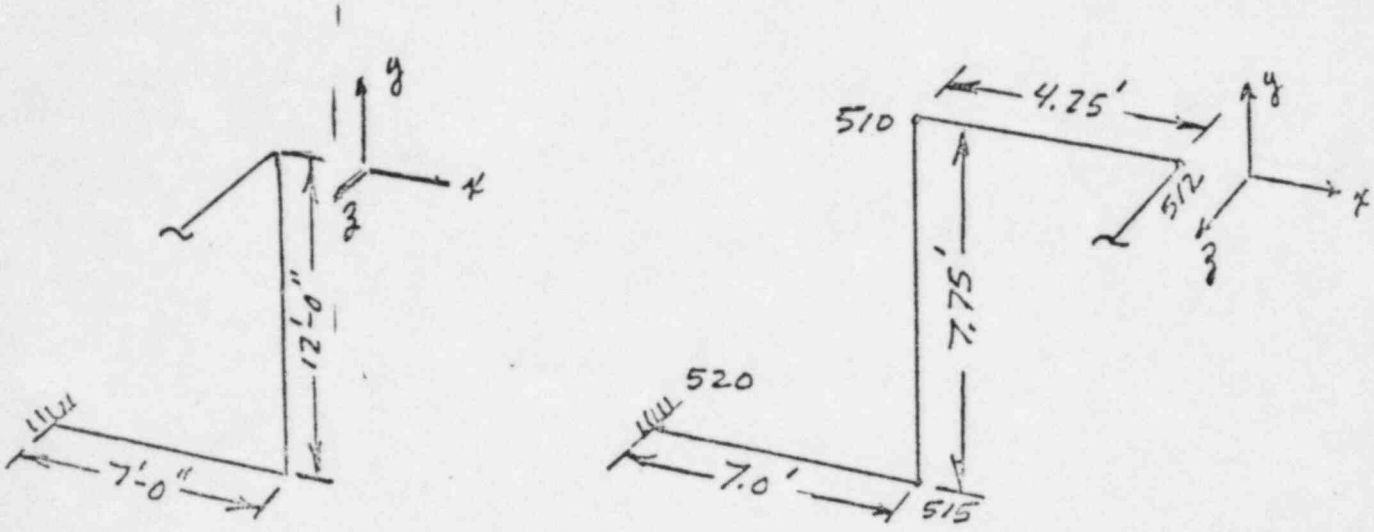
Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 4, Rev. 0, Date 5/13/85

2. Description of Observation (continuation)



As Shown on Drawing

As Modeled

In the computer analysis, the line is modeled as a span of 4.25 feet from node 510 north to node 512 (X direction), followed by a span of 7.75 feet downward to node 515, followed by a seven foot span north to the anchor at node 520.

Drawing HG-1-P-EG-13 shows a downward span of twelve feet from nodes 510 to 515, followed by a span of seven feet north to the anchor at data point 520 with no 4.25 foot span in the X direction from node 510.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 5, Rev. 0, Date 5/13/85

1. Structure(s), system(s), or component(s) involved:
ASME Code, Section III, Class 1 Piping System
Design Specification 10855-M-067 (Q), Revision 2

2. Description of Observation:
ASME, Section III, paragraphs NA-2140, NB-3114, NB-3226 and NB-6322 require evaluation of testing condition loads. Table 1 of Section 3.1, Design Specification 10855-M-067 (Q) does not explicitly address testing conditions. (continued on next page)

3. Significance of Observation:
Analysis for test conditions as required by ASME, Section III may not have been done. Because the design specification does not include the requirements for testing condition loads, Class I piping system design may not be in compliance with ASME, Section II

4. Recommendation for resolution (optional):
   a. Revise Design Specification 10855-M-067 to include testing condition loads to be in compliance with code requirements.
   b. Provide assurance that test pressures have been accounted for in the piping analyses as required by ASME, Section III.

5. Internal Review Committee classification of Observation:
____ Not significant to safety (See Item 6)
____ Additional information required (See Item 6)
____ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:

Additional information is required to determine safety significance. Provide information requested in Item 4.

7. Internal Review Commitee Signatures:

H. S. Taylor
Chairman

Mechanical Representative

Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 5, Rev. 0, Date 5/13/85

2. Description of Observation (continued)

Therefore, it is not clear how the NB-6322 requirements for using the limits of NB-3226 for determining the permissible test pressure are met. Because Design Specification 10855-M-067 (Q) requires a test pressure of 1.33 times the design pressure, the test pressure should be specifically checked for stress limits. The Design Specification does not appear to comply with ASME, Section III.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 6, Rev. 0, Date 5/13/8

1. Structure(s), system(s), or component(s) involved:
   Reactor Building Basemat
   Calculation 621-2(Q) Rev. 0
   Civil - Structural Design Criteria D2.1, Rev. 7

2. Description of Observation:
   A groundwater elevation of 95.5 feet was used in byoyancy calculation 621-2(Q), page 1. This is inconsistent with design criteria D2.1, which specifies a groundwater level of 96.0 feet
   (continued on next page)

3. Significance of Observation:
   The design of the basemat does not appear to be in accordance with the Civil/Structural Design Criteria, D2.1, and the FSAR. Also, the Design Criteria D2.1 does not appear to be in accordance with the FSAR.

4. Recommendation for resolution (optional):
   a. Revise calculations and design criteria to be consistent with FSAR commitment.
   b. Describe the BPC process for assuring consistency between design documents and FSAR commitments.

5. Internal Review Committee classification of Observation:
   _x_ Not significant to safety (See Item 6)
   ___ Additional information required (See Item 6)
   ___ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
   The differences in groundwater level between the three documents is not significant enough to affect the design adequacy of the reactor building basemat.

7. Internal Review Commitee Signatures:

D. S. Taylor
Chairman

Mechanical Representative

Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 6, Rev. 0, Date 5/13/85

Description of Observation: (continuation)

and the FSAR, Section 2.4.13.1 states the groundwater level can be up to 97 feet.

OBSERVATION REPORT

OR No. 7 , Rev. 0 , Date 5/13/83

1. Structure(s), system(s), or component(s) involved:
Reactor building basemat, Calculation Numbers: 621-2(Q), Rev. 0
621-15(Q), Rev. 0
621-1(Q), Rev. 0
621-8(Q), Rev. 0

2. Description of Observation:
The acceptability of the Finite Element Analysis results for the basemat cannot be verified due to the following:
(continued on next page)

3. Significance of Observation:
The adequacy of the reactor building basemat design moments cannot be verified.

4. Recommendation for resolution (optional):
Provide justification for the adequacy of the reactor building basemat analysis.

5. Internal Review Committee classification of Observation:
___ Not significant to safety (See Item 6)
___ Additional information required (See Item 6)
___ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. Internal Review Commitee Signatures:

H. A. Taylor
Chairman

Mechanical Representative

Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 7, Rev. 0, Date 5/13/85

2. Description of Potential Observation: (continuation)

a. The number of elements through the thickness of the basemat is only 3. This may not provide sufficiently accurate element stresses to obtain appropriate bending moments in the mat.

b. The method used to calculate the bending moments from the element stresses as given in calculation 621-15(Q)(sheets 1&2) may not provide acceptable values as it does not account for the correct location of the stress in the element.

c. The plan size of elements is very large considering the variation of the bending moment in the mat. The limited number of element stresses may not provide an accurate moment distribution.

d. The overturning moments for each wall system, calculated in pages 7-17 of Calculation No. 621-8(Q) result in a net vertical load. The net load due to overturning moment should be zero. The calculation of the nodal forces does not account for the nodal tributary areas (i.e., nodal forces are the same and do not vary with the nodal tributary area).

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30
Page 1 of 1

OBSERVATION REPORT

OR No. 8, Rev. 0, Date 5/13/85

1. Structure(s), system(s), or component(s) involved:
   Conduit supports - Standard Type R3
   Calculation 677-38(Q), Rev. 5

2. Description of Observation:
   Calculation 677-38(Q), Rev. 5, does not consider the additional stresses due to self-weight excitation of the conduit supports.

3. Significance of Observation:
   The adequacy of conduit supports cannot be verified without documentation of the effects of self-weight excitation.

4. Recommendation for resolution (optional):
   a. Document the effects of self weight excitation on the design of conduit supports and justify not including self weight.
   b. Assure that with the addition of self weight the design of the conduit supports meets all FSAR commitments.

5. Internal Review Committee classification of Observation:
   ___ Not significant to safety (See Item 6)
   ___ Additional information required (See Item 6)
   ___ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
   Additional information is required to determine the safety significance. Provide information requested in Item 4.

7. Internal Review Commitee Signatures:

H. A. Taylor
Chairman

Mechanical Representative

Electrical Representative

Structural Representative

Control and Instrumentation Representative

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

OBSERVATION REPORT — OR No. 9, Rev. 0, Date 5/13/85

1. Structure(s), system(s), or component(s) involved:
   6"Ø Conduits
   Drawing E-1406, Rev. 2
   Calculation 677-38(Q), Rev. 5

2. Description of Observation:
   Allowable spans for 6"Ø conduits are given in Table C-1, page 3.20.2 of drawing E-1406, Rev. 2, for all areas of the plant.
   (continued on next page)

3. Significance of Observation:
   The adequacy of the use of 6"Ø conduits in areas of the Reactor Building above El. 132'-0" and in the Control - R/W Building above El. 124'-0" cannot be verified.

4. Recommendation for resolution (optional):
   a. Determine if 6" conduit has been used in Reactor Building above El. 132'-0" and the Control - R/W Building above El. 124'-0".
   b. If 6" conduit has been used above these elevations, calculation shall be provided to justify the spans used. (continued on next page)

5. Internal Review Committee classification of Observation:
   ______ Not significant to safety (See Item 6)
   __x__ Additional information required (See Item 6)
   ______ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
   Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. Internal Review Commitee Signatures:

   H. S. Taylor
   Chairman

   E. B. [signature]
   Mechanical Representative

   [signature]
   Electrical Representative

   [signature]
   Structural Representative

   [signature]
   Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 9, Rev. 0, Date 5/13/85

2. Description of Observation: (continuation)

Calculation 677-38(Q), Rev. 5, pages 350-354, appears to only provide spans for the 6"Ø conduits in the Reactor Building below El. 132'-0" and in the Control - R/W Building below El. 124'-0".

4. Recommendation for resolution (optional): (continuation)

c. Revise table C-1 to provide controls necessary for the use of 6"Ø conduit above Reactor Building El. 132'-0" and Control - R/W Building 124'-0",

OBSERVATION REPORT

OR No. 10, Rev. 0, Date 5/13/85

1. Structure(s), system(s), or component(s) involved:
ASME Code, Section III, Class I Piping Systems Design Specification 10855-M-067 (Q), Revision 2.

2. Description of Observation:
The subject design specification, Section 3.1, requires that operating pressure be utilized for certain load combination calculations. The design specification further states in

(continued on next page)

3. Significance of Observation:
A potential exists that inaccurate pressure values may have been used in calculating loading combinations.

4. Recommendation for resolution (optional):
a. Revise the Design Specification to clarify the proper pressure to be used in the design calculation.

(continued on next page)

5. Internal Review Committee classification of Observation:
_____ Not significant to safety (See Item 6)
__x__ Additional information required (See Item 6)
_____ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
Added information is required to evaluate safety significance. Provide information requested in Item 4.

7. Internal Review Commitee Signatures:

H. S. Taylor
Chairman

Mechanical Representative

Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 10, Rev. 0, Date 5/13/85

2. Description of Observation: (continuation)

Section 3.1 that design pressures are listed in both BPC line index and General Electric process diagrams. This implies that either of these documents is appropriate for use as design input. However, review of the line index and process diagrams shows reference to the following terminology only:

Line Index 10855-P-0501, Revision 17, for line number 1FD-DBA-001, HPCI steam from main steam line C: Design Rating: 1,209; Normal: 1,120; Max: 1,330.

General Electric Process Diagram 761E270AC, Revision 4, Design Conditions Table lists the following: Peak Pressure: 1,330; Normal Maximum Pressure: 1,120.

Since the term "Operating Pressure" is not used in these documents, the design specification requirement may not be consistently met.

Also, there appears to be no BPC document that requires "maximum" line index pressure values to be used for "Operating Pressure," a procedure that BPC verbally stated is the practice.

4. Recommendation for resolution (optional):

b. Provide the basis for selection of pressure values used in establishing the loading conditions required by the Design Specification.

c. Provide assurance that the basis has been used for the selection of pressure values throughout the piping design for the project.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

OBSERVATION REPORT

OR No. 11, Rev. 0 , Date 5/13/8

1. Structure(s), system(s), or component(s) involved:
Class 1 piping systems designed by BPC.
Design Specification for Nuclear Power Piping ASME, Section III.
Class 1 10855-M-067(Q), Rev. 2, dated 8/1/83

2. Description of Observation:
ASME III NB-3113, Operating Conditions, requires that each condition: normal, upset, emergency, faulted and testing, "be in the Design Specification in such detail, as will provide a complete basis for design."
(continued on next page)

3. Significance of Observation:
Lack of definition of what is to be included in a given load in a load combination may result in inaccurate load inputs to piping stress analysis.

4. Recommendation for resolution (optional):
   a. Revise the design specification to define the loading terminology and to provide loading combinations as required by the FSAR, Table 3.9-8.

(continued on next page)

5. Internal Review Committee classification of Observation:
______ Not significant to safety (See Item 6)
__x__ Additional information required (See Item 6)
______ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. Internal Review Commitee
Signatures:

H. S. Taylor
Chairman

Mechanical Representative

Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 11, Rev. 0, Date 5/13/85

2. Description of Observation (continuation)

BPC Design Specification for Nuclear Power Piping ASME III, Class 1 10855-M-067(Q), Rev. 2, does not appear to define or reference a detailed definition of DBA, RVC, and RVO. Footnote 4 of Table 1 Section 3.1 of the Design Specification implies that a DBA includes effects other than resultant RPV movements. There appears to be no definition of the other effects.

4. b. Provide assurance that these loading combinations have been incorporated into the Class 1 stress analyses.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 12, Rev. 0, Date 5/13/8

1. Structure(s), system(s), or component(s) involved:
Class 1 piping system designed by BPC.
Design Specification for Nucear Power Piping ASME, Section III Class 1 10855-M-067(Q), Rev. 2, dated 8/1/83

2. Description of Observation:
ASME III, NA-2140(a), states "It is the responsibility of the owner to define acceptability criteria to be applied for faulted conditions in the Design Specification."
(continued on next page)

3. Significance of Observation:
Lack of references to the source of design inputs do not readily allow verification or the compliance of stress reports to the Design Specification (M-067) requirements.

4. Recommendation for resolution (optional):
a. Provide the documentation which demonstrates that functional capability is satisfied as required by the FSAR commitment to NEDO-21985.
(continued on next page)

5. Internal Review Committee classification of Observation:
_____ Not significant to safety (See Item 6)
__x__ Additional information required (See Item 6)
_____ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:

Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. Internal Review Commitee Signatures:

H. S. Taylor
Chairman

Mechanical Representative

Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 12, Rev. 0, Date 5/13/85

2. Description of Observation: (continuation)

Footnote 3 of Table 1 in Section 3.1 of the design specification appears to provide acceptance criteria in terms of functional capability. However, there is apparently no reference to the definition of functional capability. FSAR Table 3.9-9, Footnote 2, references General Electric Document NEDO-21985, September 1978, as ensuring functional capability to essential piping. This document is not referenced in the design specification.

4. Recommendation for resolution (optional): (continuation)

b. Revise the design specification to implement the requirements of NEDO-21985.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

OBSERVATION REPORT

OR No. 13, Rev. 0, Date 5/13/85

1. Structure(s), system(s), or component(s) involved:
Design Specification 10855-M-068(Q), Rev. 1, for Nuclear Power Piping ASME Section III, Class 2 and 3

2. Description of Observation:
The load combinations in Section 6.2 of Design Specification 10855-M-068(Q), Rev. 1, do not agree with those committed to in Table 3.9-8 of the HCGS FSAR.

3. Significance of Observation:
There is an apparent lack of implementing an FSAR licensing commitment.

4. Recommendation for resolution (optional):
   a. Revise the Design Specification 10855-M-068 (Q) to require consideration of the load combination specified in the FSAR Table 3.9-8. (continued on next page)

5. Internal Review Committee classification of Observation:
   ______ Not significant to safety (See Item 6)
   __x__ Additional information required (See Item 6)
   ______ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. Internal Review Commitee Signatures:

H. A. Taylor
Chairman

Mechanical Representative

Electrical Representative

Structural Representative

Control and Instrumentation Representative

4. Recommendation for resolution (optional): (continuation)

   b. Describe the process that is used to ensure that FSAR commitments are incoporated into the design.

J. L. Milhoan

E. Imbro
Wang PDR

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H. STEPHEN TAYLOR
ASSOCIATE
312-269-6371

LSP-35
May 17, 1985
Project No. 7212-30

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Independent Design Verification Program
Observation Reports

Mr. W. F. Bauer
Principal Engineer
Public Service Electric and Gas Company
80 Park Plaza
Newark, New Jersey 07101

Dear Mr. Bauer:

Enclosed for your information and action is one copy each of Observation Report Nos. 14 and 15 resulting from the IDVP of the Hope Creek Generating Station.

The Observation Reports should be reviewed and the Resolution Report sheets completed and signed by Bechtel and PSE&GC and returned as soon as possible. Return of original documents should be via Federal Express or equivalent overnight service in order to facilitate S&L's disposition of the Observation Reports.

Any questions you or Bechtel may have concerning these Observation Reports should be addressed in accordance with the Program Plan Protocol.

Yours very truly,

H. S. Taylor

H. S. Taylor
Chairman, Internal Review Committee

HST:mr
Enclosure
Copies:
J. P. Milhoan
L. C. Oesterich
P. L. Wattelet
W. A. Bloss (2)
O. Zaben
W. D. Crumpacker
T. J. Duffy
H. G. L. McCullough
R. M. Schiavoni
D. P. White

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-50

OBSERVATION REPORT

OR No. 14, Rev. 0, Date 5/17/85

1. Structure(s), system(s), or component(s) involved:
   Reactor building basemat - Drawing C-0483-1, Rev. 8
   Detail 3

2. Description of Observation:
   The drawing indicates that the horizontal reinforcing bar spacing used in the reactor building basemat can be 26" on center. This would exceed the ACI 318-71 code maximum spacing of 18" on center as required by Section 7.4.3. (continued on next page)

3. Significance of Observation:
   The maximum horizontal and shear bar spacing used in the reactor building basemat may violate the requirements of ACI 318-71, Section 7.4.3 and 17.6.1, respectively.

4. Recommendation for resolution (optional):
   A. Justify why the horizontal and shear rebar spacing deviate from the ACI code.
   B. Update FSAR to document this exception. (continued on next pg.)

5. Internal Review Committee classification of Observation:
   ___ Not significant to safety (See Item 6)
   ___ Additional information required (See Item 6)
   ___ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
   Since rebar spacing in this case does not affect the strength of the basemat, capability of the mat to perform its function is not in question.

7. Internal Review Commitee Signatures:

H. S. Taylor
Chairman

Mechanical Representative

Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 14 , Rev. 0 , Date 5/17/85

2. Description of Observation: (continuation)

The drawing also indicates that the shear reinforcing bar spacing used in the reactor building basemat can be on 26" by 52" centers. This would exceed Section 17.6.1 of the ACI 318-71 code which has a maximum spacing of 24" on centers.

4. Recommendation for resolution (optional): (continuation)

C. Provide assurances that all other rebar spacing complies with the requirements of ACI 318-71.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 15, Rev. 0, Date 5/17/85

1. Structure(s), system(s), or component(s) involved:

   Cable Tray Support Type 03
   Drawing E-1406-0, Rev. 44
   Calculation 677-3 (Q), Rev. 4

2. Description of Observation:

   A. The allowable axial stress determined in calculation 677-3 (Q), pages 19-26, appears to have considered an out-of-plane unbraced length based on the assumption (continued on next page)

3. Significance of Observation:

   A. The largest unbraced length may not have been considered in determining the allowable axial stress in the vertical members of Type 3 cable tray supports. (continued on next page)

4. Recommendation for resolution (optional):

   A. Evaluate Cable Tray Support Type 03 for maximum unbraced length of vertical member, effects of self weight and tolerance variation allowed under drawing E-1406-0. (continued on next page)

5. Internal Review Committee classification of Observation:

   ____ Not significant to safety (See Item 6)
   ____ Additional information required (See Item 6)
   ____ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:

   Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. Internal Review Commitee Signatures:

   W. L. Taylor
   Chairman

   Mechanical Representative

   Electrical Representative

   Structural Representative

   Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 15, Rev. 0, Date 5/17/85

2. Description of Observation: (continuation)

that the vertical member is braced out-of-plane at the vertical location of the middle tray of a 3-level tray hanger. This location corresponds to the normal location of the longitudinal brace. While this may be a valid assumption, it does not appear to recognize that sheet 3.20.23 of drawing E-1406-0 allows the location of the longitudinal brace at any point between the location of the middle tray and the bottom of the vertical member. This could potentially increase out-of-plane unbraced length of the vertical member by 25 inches, which could result in the vertical member exceeding AISI allowable stresses.

B. The added stresses due to the self weight and self weight seismic excitation of the hanger does not appear to be addressed in calculation 677-3 (Q).

C. Drawing E-1406-0, sheet 3.24.03 appears to specify a 7'-0" maximum dimension from the top of the support to the top tray level. Calculation 677-3 (Q) appears to evaluate this dimension as 6'-0" maximum.

D. The ± 2" horizontal and vertical location tolerance for the cable tray given in note 3.11, drawing E-1406-0, and the + 1'-0" vertical dimension tolerance for the distance from the top of the hanger to the top of the tray level does not appear to have been addressed in calculation 677-3 (Q), which could result in the horizontal and vertical members exceeding the AISI allowable stresses.

3. Significance of Observation: (continuation)

B. The possible added stresses due to self weight and self weight seismic excitation of the hanger do not appear to be addressed in the calculations.

C. There appears to be a conflict between the design drawing and the calculations.

D. The calculations do not appear to address the specified tolerances.

Based on these four items, the design adequacy of the Type 03 cable tray support cannot be verified.

4. Recommendation for resolution (optional): (continuation)

B. Assess if the effects above occur on any other cable tray support types and assure that the supports are within their allowable stresses required by the FSAR.

J. L. Milhoan

E. Imbro

~~Henry~~

PDR

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312-269-6371

LSP-34
May 16, 1985
Project No. 7212-00

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Independent Design Verification Program
Observation Reports

Mr. W. F. Bauer
Principal Engineer
Public Service Electric and Gas Company
80 Park Plaza
Newark, New Jersey 07101

Dear Mr. Bauer:

Enclosed for your information and action is one copy of Observation Report No. 16 resulting from the IDVP of the Hope Creek Generating Station.

The Observation Report should be reviewed and the Resolution Report sheets completed and signed by Bechtel and PSE&GC and returned as soon as possible. Return of original documents should be via Federal Express or equivalent overnight service in order to facilitate S&L's disposition of the Observation Report.

Any questions you or Bechtel may have concerning this Observation Report should be addressed in accordance with the Program Plan Protocol.

Yours very truly,

H. S. Taylor

H. S. Taylor
Chairman, Internal Review Committee

HST:nd
Enclosure
Copies:
J. P. Milhoan
L. C. Oesterich
P. L. Wattelet
W. A. Bloss(2)
O. Zaben
W. D. Crumpacker
T. J. Duffy
H. G. L. McCullough
R. M. Schiavoni
D. P. White

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 16 , Rev. 0 , Date 5/16/85

1. Structure(s), system(s), or component(s) involved:
HPCI System, Suppression Chamber Level Instrumentation P&ID, M-55-1, Revision 12, dated 12/6/84.

2. Description of Observation:
FSAR, Sections 6.3.2.2.1 and 7.3.1.1.1.1 requires that the HPCI system initially inject water from the Condensate Storage Tank. When the water level in the tank falls below a predetermined level
(continued on next page)

3. Significance of Observation:
Considering the P&ID as the top level system design document, missing references to other drawings which show the required design could cause omissions in the required design.

4. Recommendation for resolution (optional):
a. Revise the P&ID to show the correct GE Elementary Diagram reference.

(continued on next page)

5. Internal Review Committee classification of Observation:
__x__ Not significant to safety (See Item 6)
_____ Additional information required (See Item 6)
_____ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
Document review shows that the cable block diagram was completed and the physical electrical design is completed from this diagram.

7. Internal Review Commitee Signatures:

H. A. Taylor
Chairman

Mechanical Representative

L. R. STENSLAND for C. M. Chappell
Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 16, Rev. 0, Date 5/16/85

2. Description of Observation: (continuation)

or the suppression chamber water level is high, the pump suction should automatically transfer to the suppression chamber. The P&ID does not show the reference to the GE Elementary Diagram from the suppression chamber level instrumentation to complete the design for the automatic transfer.

4. Recommendation for resolution (optional): (continuation)

b. Provide an explanation of the design process which causes the design to be completed from P&ID references and assurance that reference omissions from other P&ID's to GE Elementary Diagrams have not caused design omissions.

J. L. Milhoan

~~E. Imbro~~
~~Hou Bt~~
PBR

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H. STEPHEN TAYLOR
ASSOCIATE
312-269-6371

LSP-36
May 20, 1985
Project No. 7212-30

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Independent Design Verification Program
Observation Reports

Mr. W. F. Bauer
Principal Engineer
Public Service Electric and Gas Company
80 Park Plaza
Newark, New Jersey 07101

Dear Mr. Bauer:

Enclosed for your information and action is one copy each of Observation Report Nos. 17 and 18 resulting from the IDVP of the Hope Creek Generating Station.

The Observation Reports should be reviewed and the Resolution Report sheets completed and signed by Bechtel and PSE&GC and returned as soon as possible. Return of original documents should be via Federal Express or equivalent overnight service in order to facilitate S&L's disposition of the Observation Reports.

Any questions you or Bechtel may have concerning these Observation Reports should be addressed in accordance with the Program Plan Protocol.

Yours very truly,

H S Taylor/by A Mraz

H. S. Taylor
Chairman, Internal Review Committee

HST:nd
Enclosures
Copies:
J. L. Milhoan
L. C. Oesterich
P. L. Wattelet
W. A. Bloss (2)
O. Zaben
W. D. Crumpacker
T. J. Duffy
H. G. L. McCullough
R. M. Schiavoni
D. P. White

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 18 , Rev. 0 , Date 5/20/85

1. Structure(s), system(s), or component(s) involved:
Seismic Qualification Report 10855-E-118(Q), Rev. 0, BPC Approved 9/7/84, PSE&G approved 9/26/84, for 480V Motor Control Centers

2. Description of Observation:
FSAR Section 3.10 identifies the Class 1E equipment requiring seismic qualification, the qualification method and requirements. There is an apparent failure to meet a design requirement in that
(continued on next page)

3. Significance of Observation:
This apparent breakdown in design process could have resulted in testing of the Motor Control Centers to superseded response spectra. From S&L's review of the SQ Audit Package, it appears that Patel
(continued on next page)

4. Recommendation for resolution (optional):
a. Bechtel should identify the breakdown in the design process which permitted the use of a superseded material requisition and should provide assurance that their design process has
(continued on next page)

5. Internal Review Committee classification of Observation:
___ Not significant to safety (See Item 6)
___ Additional information required (See Item 6)
___ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. Internal Review Commitee Signatures:

H S Taylor / by A Mras
Chairman

Mechanical Representative

Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT OR No. 18, Rev. 0, Date 5/20/85

2. Description of Observation: (continuation)

the seismic test procedure, which referenced a superseded material requisition, was authorized to be used by Bechtel. Patel Engineers' Test Procedure for seismic qualification of 480VAC Motor Control Centers, PE1-TR-833504-1, Rev. A, referenced Bechtel Material Requisition 10855-E-118(Q), Rev. 17. Bechtel reviewed the test procedure, Rev. A and granted Patel Engineers permission to proceed on March 1, 1984. This material requisition was superseded on October 5, 1983 by Rev. 18, which changed substantially all of the required spectra. Thus the test that was approved was based on outdated information.

3. Significance of Observation: (continuation)

Engineers did obtain the appropriate response spectra. However, it appears that the appropriate response spectra was transmitted to Patel Engineers by means other than revision of the material requisition.

4. Recommendation for resolution: (continuation)

has sufficient controls to insure that equipment is qualified to current requirements.

b. Describe the BPC method for transmitting revised requirements for material requisitions to manufacturer and subcontractor and assure that the process has been used for other material requisitions.

OBSERVATION REPORT

OR No. 17, Rev. 0, Date 5/20/85

1. Structure(s), system(s), or component(s) involved:
   a. BPC Drawing 10855-P-3001-1, Rev. 0, dated 5/10/76, "Flued Head Details" (current revision is 06, dated 2/6/79)
   b. BPC Calculation SC27-1, Rev. 0, dated 4/16/85

(continued on next page)

2. Description of Observation:
   Bechtel Engineering Department Procedure EDP 4.37, Rev. 6, Paragraph 2.2, requires that:

(continued on next page)

3. Significance of Observation:
   This apparent design process breakdown could result in:
   a. Design of the mechanical penetration flued heads and the flued head support structure to loads which may not have been adequate.

(continued on next page)

4. Recommendation for resolution (optional):
   a. BPC should identify the management and technical processes governing the design of mechanical penetrations from identification of design input to issuance of design

(continued on next page)

5. Internal Review Committee classification of Observation:
   ____ Not significant to safety (See Item 6)
   ____ Additional information required (See Item 6)
   ____ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
   Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. Internal Review Commitee Signatures:

H S Taylor / by A Morris
Chairman

Mechanical Representative

Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT OR No. 17, Rev. 0, Dated 5/20/85

1. Structure(s), system(s), or component(s) involved: (continuation)

   c. Basic Technology Inc. Report BTI-76079, dated July 1, 1978, "Flued Head Fittings for Primary Containment Penetrations for the Hope Creek Generating Station." (BPC Reference No. 10855-P-404(Q)-37(1)-3)

2. Description of Observation: (continuation)

   "Calculations shall be completed, in accordance with this procedure, prior to using calculation results for input to other committed or final calculations, issuing drawings for construction, issuing equipment specifications, or issuing other documents for use outside project engineering."

   There is an apparent failure to meet design requirement in that:

   a. BPC Drawing P-3001-1, Rev. 0, dated 5/10/76, for the mechanical penetration flued heads was issued for fabrication prior to the BTI Analysis Report (reference c) supporting the design.

   b. The BTI Analysis Report is not signed off by the preparer, checker, or approved and is stamped as being preliminary.

   c. BPC initially did not provide calculations supporting the faulted condition loads shown on Drawing P-3001-1, Rev. 0. In response to an S&L question, BPC generated Calculation SC27-1 Rev. 0, on 4/16/85, to demonstrate to S&L the basis and adequacy of the faulted loads; however, this does not provide assurance that an approved calculation was completed before the issuance of P-3001-1, Rev. 0.

3. Significance of Observation: (continuation)

   b. Fabrication of the flued heads to a design which may not have been adequate for Hope Creek.

4. Recommendation for Resolution: (continuation)

   documents and provide assurance that these processes were followed in the design of other mechanical penetrations.

   b. BPC should provide assurance that approved calculations exist which support the design of the mechanical penetration flued heads.

J. L. Milhoan

PDR

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H. STEPHEN TAYLOR
ASSOCIATE
312-269-6371

LSP-37
May 22, 1985
Project No. 7212-30

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Independent Design Verification Program
Observation Reports

Mr. W. F. Bauer
Principal Engineer
Public Service Electric and Gas Company
80 Park Plaza
Newark, New Jersey 07101

Dear Mr. Bauer:

Enclosed for your information and action is one copy each of Observation Reports Nos. 19 through 31 resulting from the IDVP of the Hope Creek Generating Station.

The Observation Reports should be reviewed and the Resolution Report sheets completed and signed by Bechtel and PSE&GC and returned as soon as possible. Return of original documents should be via Federal Express or equivalent overnight service in order to facilitate S&L's disposition of the Observation Reports.

Any questions you or Bechtel may have concerning these Observation Reports should be addressed in accordance with the Program Plan Protocol.

Yours very truly,

H S Taylor / by A Mours

H. S. Taylor
Chairman, Internal Review Committee

HST:nd
Enclosures
Copies:
J. L. Milhoan
L. C. Oesterich
P. L. Wattelet
W. A. Bloss (2)
O. Zaben
W. D. Crumpacker
T. J. Duffy
H. G. L. McCullough
R. M. Schiavoni
D. P. White

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 19, Rev. 0, Date 5/21/85

1. **Structure(s), system(s), or component(s) involved:**
Electrical Auxiliary System Switchgear - Short Circuit Capabilities Bechtel Calculation 1.1 (Q), Rev. 5, Short Circuit Studies of 13.8, 7.2, 4.16kV Systems"

2. **Description of Observation:**
Prefault voltages used in the calculation for momentary short circuit currents for 13.8kV, 7.2kV and 4.16kV busses were 1.04 per unit, 1.0 per unit and 1.00 per unit respectively.
(continued on next page)

3. **Significance of Observation:**
The momentary short circuit current at the 4.16 kV busses is within 3% of the breaker rating. An increase in the prefault voltage from the assumed values might lead to an overduty on the 350 MVA breakers.

4. **Recommendation for resolution (optional):**
Determine if additional compensating factors, i.e. transformer or cable voltage drops will reduce the prefault voltage to assumed values. Provide assurance that other fault studies
(continued on next page)

5. **Internal Review Committee classification of Observation:**
____ Not significant to safety (See Item 6)
x Additional information required (See Item 6)
____ Potentially Significant to Safety (See Item 8)

6. **Internal Review Committee reason for non-safety-significance of Observation or additional information required:**
Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. **Internal Review Commitee Signatures:**

H S Taulz / by CP Moran
Chairman

[signature]
Mechanical Representative

[signature]
Electrical Representative

[signature]
Structural Representative

[signature]
Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 19, Rev. 0, Date 5/21/85

2. Description of Observation: (continuation)

Based on the following factors it is not clear that these prefault voltages are conservative:

a. The maximum voltage of the 500kV system is 1.06 per unit, as given by Exhibit A of calculation 1.1Q.

b. The 500 - 14.4kV transformers are set at the 14.4kV tap, which gives a voltage boost of 4.3%.

c. The maximum buck in each of load tap changers for the 13.8 - 7.2kV and 13.8 - 4.16kV transformers is 5%.

d. Based on the above, the maximum prefault voltages are 1.106 per unit for the 13.8kV busses and 1.056 per unit for the 7.2kV and 4.16kV busses.

4. Recommendation for resolution (optional): (continuation)

have implemented the required conservatism similar to Assumption 5 for these calculations.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 20 , Rev. 0 , Date 5/21/85

1. **Structure(s), system(s), or component(s) involved:**
   13.8kV ring bus fault detection.
   FSAR Section 8.2.14, page 8.2-4.

2. **Description of Observation:**
   FSAR Section 8.2.14 states "The neutral of the grounding transformer is connected to a 0.5-ohm resistor and relay for phase-to-ground fault detection and annunciation." This is inconsistent with
   (continued on next page)

3. **Significance of Observation:**
   The selection of the neutral grounding resistors does not appear to be in accordance with the FSAR.

4. Recommendation for resolution (optional):
   a. PSE&G/BPC is to provide specific information as to how the observation has or will be corrected. Will the FSAR or design drawing be revised?
   (continued on next page)

5. Internal Review Committee classification of Observation:
   ___ Not significant to safety (See Item 6)
   ___ Additional information required (See Item 6)
   ___ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
   The values of neutral grounding resistor sizes shown on the design drawing and on the calculation are adequate.

7. Internal Review Commitee Signatures:

H.S. Taylor/by A Mann
Chairman

Mechanical Representative

Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 20, Rev. 0, Date 5/21/85

2. Description of Observation: (continuation)

PSE&G Drawing 249000A1818-5, Rev. 5, 8/29/84, 500kV Switchyard One Line Control Diagram Electrical, which indicates resistor sizes of 770, 1500 or 950 ohm depending on the particular grounding transformers. This drawing information is supported by PSE&G letter dated 7/9/82, K. H. Change to G. W. Supplee, and PSE&G calculation "Grounding Transformers Ground Alarm Relays" dated 1/11/84.

4. Recommendation for resolution (optional): (continuation)

b. PSE&G/BPC is to describe the failure in the process identified above that resulted in this observation.

c. PSE&G/BPC is to identify the process that controls the updating of the FSAR, to keep it current with the design, particularly when the design is within the scope of PSE&G.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

OBSERVATION REPORT

OR No. 21, Rev. 0, Date 5/21/85

1. **Structure(s), system(s), or component(s) involved:**
   Class 1E 480V Unit Substation Transformers' Impedances
   FSAR Section 8.3.1.1.2.6.b.1 and Figure 8.3-12
   Bechtel Calculation 1.3Q

2. **Description of Observation:**
   FSAR Section 8.3.1.1.2.6.b.1 states "Transformers: 4160V-480V, 1333kVA, 6.75% impedance..."; FSAR Figure 8.3-12 indicates the impedances of these transformers are 6.75%. Contrary to this (continued on next page)

3. **Significance of Observation:**
   The selection of transformer impedance is not in accordance with the FSAR.

4. Recommendation for resolution (optional):
   a. BPC is to provide specific information as to how the observation has or will be corrected. Will the FSAR or design calculation be revised? (continued on next page)

5. Internal Review Committee classification of Observation:
   __x__ Not significant to safety (See Item 6)
   _____ Additional information required (See Item 6)
   _____ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
   The calculation for short circuits utilized the actual impedance based on test reports.

7. Internal Review Commitee Signatures:

H. S. Taylor / by A. Moran
Chairman

[signature]
Mechanical Representative

[signature]
Electrical Representative

[signature]
Structural Representative

[signature]
Control and Instrumentation Representative

OBSERVATION REPORT OR No. 21, Rev. 0, Date 5/21/85

2. Description of Observation: (continuation)

Calculation 1.3(Q), Short Circuit Study of 480V Systems, Rev. 1, dated 11/20/84, establishes short circuit current on the 480V busses utilizing 8.75% at 1333kVA as the transformer impedance. In addition, transformer test reports attached to Calculation 1.3(Q) show that the actual impedances are 8.75% or larger.

4. Recommendation for resolution (optional): (continuation)

b. BPC is to describe the failure in the process identified above that resulted in this observation.

c. BPC is to identify the process that controls the updating of the FSAR to keep it current with the design.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 22 , Rev. 0 , Date 5/21/85

1. **Structure(s), system(s), or component(s) involved:**
Class 1E 480V Motor Control Center Circuit Breakers
FSAR Section 8.3.1.1.2.6.c.3
Bechtel Calculation 1.3Q

2. **Description of Observation:**
FSAR Section 8.3.1.1.2.6.c.3 states "Circuit breakers (molded case): 480V, interrupting rating, 22000A rms symmetrical." Contrary to this, Calculation 1.3(Q), Short Circuit Study of
(continued on next page)

3. **Significance of Observation:**
The interrupting rating of the 480V motor control center breakers is not in accordance with the FSAR.

4. Recommendation for resolution (optional):
a. BPC is to provide specific information as to how the observation has or will be corrected. Will the FSAR or design calculation be revised? (continued on next page)

5. Internal Review Committee classification of Observation:
____ Not significant to safety (See Item 6)
____ Additional information required (See Item 6)
____ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
The value obtained from the short circuit current calculation was used in the specification for 480V motor control centers.

7. Internal Review Commitee Signatures:

H.S Taylor /by [illegible]
Chairman

Mechanical Representative

Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT OR No. 22, Rev. 0, Date 5/21/85

2. Description of Observation: (continuation)

480V Systems, Rev. 1, dated 11/20/84, indicates the interrupting rating for these circuit breakers as 25kA. In addition, Specification 10855-E-118(Q), 480V Motor Control Centers, specifies the circuit breaker interrupting rating at 25kA.

4. Recommendation for Resolution: (continuation)

b. BPC is to describe the failure in the process identified above that resulted in this observation.

c. BPC is to identify the process that controls the updating of the FSAR to keep it current with the design.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 23, Rev. 0, Date 5/21/85

1. **Structure(s), system(s), or component(s) involved:**

   Seismic Qualification Report 10855-E-118(Q), Rev. 0, BPC approved 9/7/84, PSE&G approved 9/26/84, for 480V Motor Control Centers

2. **Description of Observation:**
   FSAR Section 3.10 identifies the Class 1E equipment requiring seismic qualification, the qualification method and requirements. There is an apparent failure to meet a design requirement in

(continued on next page)

3. **Significance of Observation:**
   Lack of justification for engineering judgement may result in extension of test results to inappropriate configurations.

4. **Recommendation for resolution (optional):**
   BPC should provide justification that qualification results for the 5 bay and 6 bay motor control center can be extrapolated to a 26 bay MCC.

5. Internal Review Committee classification of Observation:
   _____ Not significant to safety (See Item 6)
   _x_ Additional information required (See Item 6)
   _____ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
   Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. Internal Review Commitee Signatures:

H.S. Taylor / by R. Moss
Chairman

Mechanical Representative

Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 23, Rev. 0, Date 5/21/85

2. Description of Observation: (continuation)

that a technically incomplete analysis was used to establish the basis of the seismic qualification for 480V motor control centers.

a. Patel Engineers performed analysis on a 5 bay and a 26 bay MCC on 12/1/83 to determine which configuration was most severe and should be tested. The analysis showed the 5 bay configuration to be more severe.

b. On 12/30/83 BPC commented on the Patel Engineers analysis stating that the approach was not clear and that the model needed to be verified as the results did not appear to be reasonable. Therefore, the 5 bay configuration may not be the most severe configuration.

c. On 3/1/84 BPC granted Patel Engineers permission to proceed with the test of 5 bay configuration. It appears that BPC authorized seismic qualification testing of a MCC when they had serious doubts about the adequacy of the analysis which provides the basis for the test.

d. Testing was completed on 4/12/84.

e. To date, BPC has not accepted the Patel Engineers analysis. BPC has accepted the test results. On 9/7/84, BPC performed independent calculations on a 5 bay and a 6 bay MCC to justify the testing performed on the 5 bay motor control center.

f. BPC states that their analysis of the 5 and 6 bay MCC's demonstrates that the 5 bay is more severe than the 6 bay MCC. Therefore, "by judgement" longer line ups of MCC's (more than 6 bay) are also seismically qualified. Extrapolating the results of a 5 bay and 6 bay MCC up to a 26 bay MCC appears to be a questionable use of engineering judgement.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 24, Rev. 0, Date 5/21/85

1. Structure(s), system(s), or component(s) involved:
Damping values used in the dynamic analysis of Seismic Category 1 Active Equipment
Equipment Qualification Report 10855-M-070(Q)-47-3 (February 8, 1980
Equipment Qualification Report 10855-E-112A(Q)-14-4, Rev. 2

2. Description of Observation:
There is an apparent discrepancy between the FSAR and Regulatory Guide 1.61 regarding the damping to be used in the dynamic analysis of Seismic Category 1 Active Equipment.

(continued on next page)

3. Significance of Observation:
This apparent discrepancy may mean that the seismic qualification analysis of Seismic Category 1 Active Equipment may not be in accordance with NRC requirements.

4. Recommendation for resolution (optional):
a. BPC should provide assurance that the actual damping values used in the analysis of Seismic Category 1 Active Equipment are in accordance with the Regulatory Guide.

(continued on next page)

5. Internal Review Committee classification of Observation:
_____ Not significant to safety (See Item 6)
__X__ Additional information required (See Item 6)
_____ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. Internal Review Commitee Signatures:

H. S. Taylor / by A. Fiore
Chairman

Mechanical Representative

Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT OR No. 24, Rev. 0, Date 5/21/85

2. Description of Observation: (continuation)

FSAR Section 1.8.1.61 states "HCGS complies with Regulatory Guide 1.61."

FSAR Section 3.10.2.3.1 states "The damping values are in accordance with Regulatory Guide 1.61 and IEEE-344-1975 for electrical equipment and instrumentation.

Regulatory Guide 1.61 specifies the damping values to be considered in the analysis of Seismic Category 1 Equipment as: OBE-2%
SSE-3%
except (per Note 2) in the dynamic analysis of active components where the damping for SSE should be 2%.

FSAR Tables 3.7-1 and 3.7-2 define the damping values used for analysis of NSSS and Non-NSSS equipment as: OBE-2%
SSE-3%

but do not address the NRC requirement which specifies that for SSE, 2% damping is to be used in the dynamic analysis of Seismic Category 1 Active Equipment. A review of the two subject equipment qualification reports shows that 3% damping was used for the SSE which is contrary to the Regulatory Guide 1.61 requirements for active equipment.

4. Recommendation for Resolution (optional): (continuation)

b. BPC should justify the 3% damping values for SSE defined in FSAR Tables 3.7-1 and 3.7-2 in lieu of the 2% damping required by Regulatory Guide 1.61 for the analysis of Seismic Category 1 Active Equipment.

c. Revise the FSAR to be consistent with 1. or 2. above.

d. Describe the failure in the design process that resulted in this observation.

e. Describe the process that assures the FSAR contains requirements consistent with applicable regulatory requirements.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 25, Rev. 0, Date 5/21/85

1. **Structure(s), system(s), or component(s) involved:**
   a. HPCI Pump
   b. Bechtel Design Specification 10855-M-068(Q), Rev. 1, for Nuclear Power Piping, ASME-III, Class 2 and 3, dated 1/23/79.
   c. Bechtel Stress Analysis C-33-2(Q), Rev. 2, 11/2/83.

2. **Description of Observation:**
   FSAR Section 3.9.3.1.16 describes the HPCI pump nozzle loads that control pump design. The allowable loads in the design specification and stress analysis for the discharge piping do not appear
   (continued on next page)

3. **Significance of Observation:**
   a. There is a potential that the FSAR does not contain correct licensing commitments for HPCI pump nozzle loads.
   (continued on next page)

4. **Recommendation for resolution (optional):**
   a. BPC should clarify which design parameters are correct, FSAR or Design Specification. Will the FSAR on the Design Specification be revised?
   (continued on next page)

5. **Internal Review Committee classification of Observation:**
   _____ Not significant to safety (See Item 6)
   _____ Additional information required (See Item 6)
   _____ Potentially Significant to Safety (See Item 8)

6. **Internal Review Committee reason for non-safety-significance of Observation or additional information required:**
   Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. **Internal Review Commitee Signatures:**

H. S. Taylor / by A Mars
Chairman

Mechanical Representative

Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 25, Rev. 0, Date 5/21/85

2. Description of Observation: (continuation)

to be in accordance with the FSAR.

Also, the FSAR Section 3.9.3.1.16 appears to have an incorrect reference. It states that Table 3.9-5V has the definition of FO and MO. The Table does not appear to have this information.

3. Significance of Observation: (continuation)

b. There is a potential that an interfacing design issue between Bechtel and GE may not have been closed out satisfactorily or the close out documented properly.

4. Recommendation for Resolution (optional): (continuation)

b. Bechtel should identify the failure in the design process that resulted in the observation and how it will be corrected:

1. Bechtel should describe the process that assures that interfacing design information (including nozzle load information from suppliers) is properly communicated to the required Bechtel personnel

2. Bechtel should describe the controls which assure that any interfacing design information which cannot be accommodated by Bechtel's design is properly reviewed with the supplier of the information and Bechtel has documentation of the close out.

c. Bechtel should provide assurance that the observation is an isolated occurrence and the FSAR reflects correct nozzle loads and other design information in Section 3.9.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 26, Rev. 0, Date 5/21/85

1. **Structure(s), system(s), or component(s) involved:**
Bechtel Design Specification 10855-M-068(Q), Rev. 1, for Nuclear Power Piping, Class 2 and 3 (1/31/79)

2. **Description of Observation:**
FSAR Section 5.2.1.2.2 states that all Class 2, 3, MC and NF components have been designed to ASME code cases listed in Table 5.2-2. ASME B&PC Code Case 1606-1 is referenced in M-068,
(continued on next page)

3. **Significance of Observation:**
There is a possibility that a code case may be used for design which is not included with the list of code cases committed to by PSE&G.

4. **Recommendation for resolution (optional):**
a. Bechtel should provide specific information as to how the observation has or will be corrected. Will the FSAR or the Design Specification be revised?
(continued on next page)

5. **Internal Review Committee classification of Observation:**
____ Not significant to safety (See Item 6)
____ Additional information required (See Item 6)
____ Potentially Significant to Safety (See Item 8)

6. **Internal Review Committee reason for non-safety-significance of Observation or additional information required:**
Use of an approved code case for stress criteria for Class 2 and 3 piping provides needed criteria and will not create a safety significant condition.

7. **Internal Review Commitee Signatures:**

H.S. Taylor/by A Mason
Chairman

Mechanical Representative

Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 26, Rev. 0, Date 5/21/85

2. Description of Observation: (continuation)

but is not in FSAR Table 5.2-2.

4. Recommendation for Resolution (Optional): (continuation)

b. Bechtel should identify the failure in the design process that resulted in this observation and how it will be corrected.

c. Bechtel should provide assurance that there are no other code cases which are being used by Bechtel or subcontractors, which are not in FSAR Table 5.2-2.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 27, Rev. 0, Date 5/21/85

1. **Structure(s), system(s), or component(s) involved:**
Bechtel Design Specification 10855-M-068(Q), Rev. 1, for Nuclear Power Piping, Class 2 and 3 (1/31/79)

2. **Description of Observation:**
FSAR Sections 5.2.4 and 3.9.6 require in-service inspection to be in accordance with 1977 ASME B&PV Code Section XI with Addenda through Summer 1978. However, Section 3.1 of M-068 invokes
(continued on next page)

3. **Significance of Observation:**
Activities at the Hope Creek Site regarding ASME Section XI requirements could possibly be inconsistent with the committed edition and addenda due to apparent discrepancies between approved documents.

4. **Recommendation for resolution (optional):**
a. Bechtel should provide specific information as to how the observation has or will be corrected. Will the FSAR on the Design Specification be revised?
(continued on next page)

5. **Internal Review Committee classification of Observation:**
___ Not significant to safety (See Item 6)
___ Additional information required (See Item 6)
___ Potentially Significant to Safety (See Item 8)

6. **Internal Review Committee reason for non-safety-significance of Observation or additional information required:**
A commitment to meet either code edition is acceptable from a safety significant viewpoint.

7. **Internal Review Commitee Signatures:**

H S Taylor / by A Nims
Chairman

Mechanical Representative

Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 27 , Rev. 0 , Date 5/21/85

2. Description of Observation: (continuation)

Section XI Edition and Addenda through Summer 1975.

4. Recommendation for Resolution (optional): (continuation)

b. Bechtel should provide evidence that ISI and pre-service inspection activities at the Hope Creek Site are being done in accordance with the correct code edition and addenda.

c. Bechtel should describe the failure in the design process that resulted in this observation.

d. Describe the process for assuring consistency between the FSAR and the Design Specification regarding applicable code editions.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 28, Rev. 0, Date 5/21/85

1. Structure(s), system(s), or component(s) involved:
Bechtel Design Specification 10855-M-068(Q), Rev. 1, for Nuclear Power Piping Class 2 and 3, (January 23, 1979).
Bechtel Technical Specification 10855-P-202, Rev. 10, for field fabrication and installation of piping for Nuclear Service.

2. Description of Observation:
FSAR Section 1.8.1.37 states that HCGS complies with ANSI N45.2.1-1973 as endorsed and modified by Regulatory Guide 1.37, with clarifications and exceptions noted.
(continued on next page)

3. Significance of Observation:
Inconsistent references may have resulted in inappropriate cleaning procedures being applied.
Also, there may be inadequate controls on making reference to Bechtel's supplier documents in Bechtel's design documents.

4. Recommendation for resolution (optional):
a. Bechtel should provide specific information as to how the observation has or will be corrected. Will the Design Specification or the erection specification be revised?
(continued on next page)

5. Internal Review Committee classification of Observation:
_____ Not significant to safety (See Item 6)
__/__ Additional information required (See Item 6)
_____ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. Internal Review Commitee Signatures:

H. S. Taylor / by A. Mercer
Chairman

Mechanical Representative

Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT OR No. 28, Rev. 0, Date 5/21/85

2. Description of Observation: (continuation)

ANSI N45.2.1 covers the management of cleaning and cleanliness control of fluid systems and components. It provides a basis for development of procedures. Among the standard's requirements for planning, is a requirement for review of design specifications to ensure that provisions for cleaning have been incorporated.

M-068, Section 9, references GE Specification 22A1300BE9 for Cleaning of Pipe and Equipment. However, Bechtel 10855-P-202, Rev. 10, Section 7.3.1 states that 10855-G-099 is used for cleaning.

4. Recommendation for Resolution (optional): (continuation)

b. Bechtel should provide assurance that the apparent inconsistent reference to a cleaning specification did not result in inadequate procedures for cleaning of HCGS piping systems.

c. Bechtel should identify the failure in the design process that resulted in the observation and how it will be corrected.

d. Bechtel should provide assurance that the correct GE specification for cleaning is used and referenced in other Bechtel Design Specifications.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 29, Rev. 0, Date 5/21/85

1. Structure(s), system(s), or component(s) involved:
Bechtel Design Specification 10855-M-068(Q), Rev. 1, for Nuclear Power Piping, ASME-III, Class 2 and 3 (1/31/79)

2. Description of Observation:
FSAR Section 3.2 commits to ASME Section III. Section III, NA-4410, Design Controls, requires stress reports to be reviewed for compliance with Design Specifications.
(continued on next page)

3. Significance of Observation:
There is a possibility that stress reports and other design documents may be incorrect because the applicable Design Specification is apparently out-of-date. There is a
(continued on next page)

4. Recommendation for resolution (optional):
a. Bechtel should re-review and revise the Design Specification to bring it up-to-date.
Provide assurance that the stress reports and the overall design is compatible with the new revision. (continued on next page)

5. Internal Review Committee classification of Observation:
_____ Not significant to safety (See Item 6)
__X__ Additional information required (See Item 6)
_____ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. Internal Review Commitee Signatures:

H. S. Taylor /by O. Mears
Chairman

Mechanical Representative

Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 29 , Rev. 0 , Date 5/21/85

2. Description of Observation: (continuation)

Several OR's have identified apparent deficiencies in the Design Specification (ORs 15, 16, 17, 18, 20 and 29). Therefore, it is not apparent how the required reviews of stress reports have been accomplished with the design specification containing numerous inconsistencies.

3. Significance of Observation: (continuation)

possibility that the QA requirements of ASME Section III, may not be met.

4. Recommendation for Resolution (optional): (continuation)

b. Bechtel should identify the failure in the design process that resulted in this observation and how it will be corrected.

c. Describe the process that assures that Design Specifications are kept current with design requirements.

d. Bechtel should provide assurance that the observation is an isolated occurrence and that all other ASME III Design Specifications have been updated on a timely basis.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 30 , Rev. 0 , Date 5/21/85

1. **Structure(s), system(s), or component(s) involved:**
Drywell Shield Wall Concrete in Areas Around the Drywell Penetrations.

2. **Description of Observation:**
FSAR Section 3.8.2.1.5 states that:
"The maximum allowable temperature of the drywell shield wall concrete in the areas around the drywell penetrations is 200°F."

3. **Significance of Observation:**
This apparent failure to meet this licensing commitment could result in a reduction in the strength of concrete.

4. **Recommendation for resolution (optional):**
Bechtel should provide documentation that the subject licensing commitment is met.

5. Internal Review Committee classification of Observation:
_____ Not significant to safety (See Item 6)
_x_ Additional information required (See Item 6)
_____ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. Internal Review Commitee Signatures:

H.S. Taylor / by A Mans
Chairman

Mechanical Representative

Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 30, Rev. 0, Date 5/21/85

2. Description of Observation: (continuation)

There is no objective evidence that this licensing commitment has been met.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 31, Rev. 0, Date 5/21/85

1. **Structure(s), system(s), or component(s) involved:**
Seismic Qualification Report V.P. 10855-P-302(Q)-385-6: Class 1 Nuclear Design Report of 3", 900 lbs. C.S. Gate Valve with SMB-000-5 Limitorque Operator, for Anchor/Darling V.C., by Anamet Laboratories, Inc., Report 78.168, Rev. E, dated 9/20/83.

2. **Description of Observation:**
NQAM, Section 0, No. 4, Page 6, Rev. 10, (matrix), by way of reference to EDP-4.36 and EDP-4.37, along with 10CFR50, Appendix B, requires that computer programs used for design purposes be
(continued on next page)

3. **Significance of Observation:**
Without validation, there is a potential of using erroneous results in concluding that the components are qualified for the intended service under the postulated loads of the design environment.

4. Recommendation for resolution (optional):
a. BPC should provide validation documentation for the subject computer programs to assure the results produced are within reasonable and acceptable accuracy limits.
(continued on next page)

5. Internal Review Committee classification of Observation:
_____ Not significant to safety (See Item 6)
_____ Additional information required (See Item 6)
_____ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. Internal Review Commitee Signatures:

H. S. Taylor / Lyle D. Moran
Chairman

Mechanical Representative

Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT OR No. 31, Rev. 0, Date 5/21/85

2. Description of Observation: (continuation)

validated and the validation be documented.

The referenced design document uses results of NAØS and SAPIV computer programs (Anamet Laboratories, Inc.) to conclude that the subject component is qualified for intended service. However, there is no objective evidence of the validation documentation for these programs within the reviewed seismic qualification package.

4. Recommendation for Resolution: (continuation)

b. BPC should provide assurance that subcontractor computer programs that are used for qualification of safety-related components are validated.

c. Describe the process for assuring that subcontractor computer programs are validated.

J. L. Milhoan

~~E. Imbro~~
H. Wang
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LSP-40
May 24, 1985
Project No. 7212-30

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Independent Design Verification Program
Observation Reports

Mr. W. F. Bauer
Principal Engineer
Public Service Electric and Gas Company
80 Park Plaza
Newark, New Jersey 07101

Dear Mr. Bauer:

Enclosed for your information and action is one copy each of Observation Reports Nos. 32 through 37 resulting from the IDVP of the Hope Creek Generating Station.

The Observation Reports should be reviewed and the Resolution Report sheets completed and signed by Bechtel and PSE&GC and returned as soon as possible. Return of original documents should be via Federal Express or equivalent overnight service in order to facilitate S&L's disposition of the Observation Reports.

Also, we are enclosing Observation Report No. 24, Revision 1, dated May 23, 1985. Please note the change.

Any questions you or Bechtel may have concerning these Observation Reports should be addressed in accordance with the Program Plan Protocol.

Yours very truly,

H S Taylor/by a Moan

H. S. Taylor
Chairman, Internal Review Committee

HST:nd
Enclosures
Copies:
J. L. Milhoan
L. C. Oesterich
P. L. Wattelet
W. A. Bloss (2)
O. Zaben
W. D. Crumpacker
T. J. Duffy
H. G. L. McCullough

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 32 , Rev. 0 , Date 5/23/85

1. **Structure(s), system(s), or component(s) involved:**
Conduit yield strength Calculations:
677-38(Q) Rev. 5
677-156(Q) Rev. 0

2. **Description of Observation:**
The yield strength for conduit material has been verified based on a load test program by BPC Material and Quality Service Department. The following items do not appear to have been fully
(continued on next page)

3. **Significance of Observation:**
The adequacy of the conduit design to meet the FSAR seismic requirements cannot be evaluated.

4. **Recommendation for resolution (optional):**
a. Provide justification for sampling in test program.
b. Justify not including 2" conduit in the evaluation of the test program results.
(continued on next page)

5. **Internal Review Committee classification of Observation:**
____ Not significant to safety (See Item 6)
____ Additional information required (See Item 6)
____ Potentially Significant to Safety (See Item 8)

6. **Internal Review Committee reason for non-safety-significance of Observation or additional information required:**
Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. **Internal Review Commitee Signatures:**

H S Taylor / by A Morcos
Chairman

Mechanical Representative

L. R. STENSLAND / by C. M. Chappell
Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 32 , Rev. 0 , Date 5/23/85

2. Description of Observation: (continuation)

resolved in the evaluation of the test program presented in Calculation 677-156(Q):

a. The justification for the sampling program (sample size and conduit supplier) appears not to have been provided.

b. Per Calculation 677-38(Q), pages 366 through 368, the span length for 2" conduit is controlled by the yield strength of the conduit material. However, the test program and evaluation do not appear to address 2" conduits.

c. In Calculation 677-38(Q), page 361, the allowable span length of conduit was reduced by 10% for all conduits except for 3/4" and 1" in the upper elevations of the Reactor, D/G and Control Buildings. This margin serves as the basis in Calculation 677-38(Q), page 361, for justifying the lower yield stress obtained in the test program. Since this margin was not provided in the 3/4" and 1" conduits in these buildings, no justification exists for the test program lower yield stress for these sizes.

4. Recommendation for Resolution (optional): (continuation)

c. Provide justification for using results of conduit test program for 3/4" and 1" conduits.

OBSERVATION REPORT

OR No. 33, Rev. 0, Date 5/23/85

1. **Structure(s), system(s), or component(s) involved:**
Seismic Qualification Package 10855-P-305(Q)-317-2, BPC approved 9/27/84, PSE&G approved 9/27/84, for 24" AØ Butterfly Valve IGS-PSV-4964, which contains Wyle Report 46863-2, Rev. A.

2. **Description of Observation:**
FSAR Section 3.9.3.2.7.2 identifies the operability assurance requirements for active Non-NSSS valves. During seismic qualification testing of the subject valve, the actuator failed

(continued on next page)

3. **Significance of Observation:**
The valve supplied to Hope Creek may not be capable of operating as required in the event of an earthquake.

4. Recommendation for resolution (optional):
a. Bechtel should justify taking credit for testing performed prior to the test anomaly.

(continued on next page)

5. Internal Review Committee classification of Observation:
___ Not significant to safety (See Item 6)
___ Additional information required (See Item 6)
___ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. Internal Review Commitee Signatures:

H S Taylor / by A Marcus
Chairman

Mechanical Representative

L.R. STENSLAND / by C.M. Chappell
Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 33, Rev. 0, Date 5/23/85

2. Description of Observation: (continuation)

to rotate a full 90° when energized due to a bolt becoming loose and being wedged between the piston and the spring end retainer (Wyle Report 46863-2, page 24, Anomaly No. 6). Testing was aborted, the loose bolt reinstalled, valve was modified by adding two set screws to secure the bolt. Testing was resumed. There is an apparent failure to meet the valve operability requirements.

a. Prudent industry practice dictates that in demonstrating the qualification of a component by testing, credit cannot be taken for qualification testing performed prior to a failure. In this valve qualification test, credit was taken for the OBE sine sweep testing performed prior to the failure, without providing any justification.

b. There is no objective evidence that the valve actuators supplied to Hope Creek have been similarly modified.

4. Recommendation for Resolution (optional): (continuation)

b. Bechtel should provide assurance that the valves supplied to Hope Creek have been or will be modified, so that they are similar to the test specimen.

c. Bechtel should provide assurance that their Seismic Qualification Program has sufficient controls to assure that modifications necessitated by the qualification process are incorporated into the set of components represented in a qualification test.

d. Bechtel should provide assurance that their Seismic Qualification Program does not allow credit to be taken for qualification testing prior to a failure.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 34 , Rev. 0 , Date 5/23/85

1. **Structure(s), system(s), or component(s) involved:**
   Bechtel Design Specification 10855-M-067(Q), Rev. 2, dated 8/1/83, for Nuclear Power Piping, ASME Section III, Class 1.
   Bechtel Specification 10855-M-95(Q), Rev. 4, dated 8/1/84, for Listing of Code Editions, Addenda and Cases.
2. **Description of Observation:**
   FSAR Table 3.9-9, Footnote 1 defines ASME Code Edition and Addenda for Class 1 Non-NSSS Piping. Three exceptions are in Footnote 1 of Table 3.9-9. These exceptions are not in either Rev. 2 of M-067 or Rev. 4 of M-95.
3. **Significance of Observation:**
   ASME Class 1 design activities may not be performed in accordance with the correct code edition and addenda.

4. Recommendation for resolution (optional):
   a. Bechtel should provide specific information as to how the observation has or will be corrected. Will the FSAR or reference specifications be revised?

(continued on next page)

5. Internal Review Committee classification of Observation:
   ___ Not significant to safety (See Item 6)
   ___ Additional information required (See Item 6)
   ___ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
   Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. Internal Review Commitee Signatures:

H S Taylor / by A Mrus
Chairman

Mechanical Representative

L.R. STENSLAND / by C.M. Chiu
Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT OR No. 34, Rev. 0, Date 5/23/85

4. Recommendation for Resolution (optional): (continuation)

   b. Bechtel should identify the failure in the design process that resulted in this observation and how it will be corrected.

   c. Bechtel should describe the process for assuring consistency between the FSAR and Design Specifications.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

OBSERVATION REPORT

OR No. 35, Rev. 0, Date 5/23/85

1. **Structure(s), system(s), or component(s) involved:**
   a. Bechtel Design Specification 10855-M-067(Q), Rev. 1, (8/1/83), for ASME, Section III - Class 1, Nuclear Power Piping.

(continued on page two)

2. **Description of Observation:**
FSAR Section 3.2 commits to ASME, Section III. ASME-III, NA-3252(d), requires the design specification to include the code classification of items covered; NA-3252(e), requires

(continued on page two)

3. **Significance of Observation:**
There is a possibility that code classification may have been misapplied, due to an inadequate definition of the requirements.

4. **Recommendation for resolution (optional):**
   a. BPC should provide confirmation of the method by which code classification and code boundaries are determined and documented for instrument piping and provide corrections

(continued on page three)

5. **Internal Review Committee classification of Observation:**

______ Not significant to safety (See Item 6)
______ Additional information required (See Item 6)
______ Potentially Significant to Safety (See Item 8)

6. **Internal Review Committee reason for non-safety-significance of Observation or additional information required:**
Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. **Internal Review Commitee Signatures:**

H S Taylor /by A Moreus
Chairman

[signature]
Mechanical Representative

L.R. STENSLAND /by C.M. Chiappetta
Electrical Representative

[signature]
Structural Representative

R L Given
Control and Instrumentation Representative

OBSERVATION REPORT OR No. 35, Rev. 0, Date 5/23/85

1. Structure(s), system(s), or component(s) involved: (continuation)

   b. Bechtel Design Specification 10855-M-068(Q), Rev. 2, (1/23/79), for ASME, Section III - Class 2 and 3, Nuclear Power Piping.

   c. Bechtel HPCI System P&ID, M-55-1, Rev. 13.

   d. Bechtel P&ID Legend, M-00-0, Rev. 6.

2. Description of Potential Observation: (continuation)

   the design specification to define the boundaries. Both design specifications state that code classifications are shown on piping class sheets (PCS) and piping and instrumentation diagrams (P&ID) and that boundaries are provided on the P&ID's.

   a. For Class 1 instrument piping (tubing) downstream of excess-flow-check-valves (EFCV), the design specification appears to conflict with the P&ID requirements.

   b. For all other instrument tubing, the P&ID does not appear to have or reference classification requirements.

      Following are examples of the P&ID regarding instrument line code classification and boundary requirements.

      1. Class 1 Instrument Piping (Tubing) Downstream of EFCV's

         M-067, Section 5.3 states that instrument piping has the same code classification as the associated nuclear service piping. This implies that all instrumentation piping and tubing from the process piping to the instrument is ASME, Class 1. However, P&ID (M-55-1 for HPCI) shows a class change downstream of excess-flow-check-valves (EFCV) i.e. "CCA" to "tubing." There is no definition of "tubing" on M-55-1. Bechtel P&ID Legend M-00-0, Sheet 2, Rev. 6, Note 17, refers to Drawing 10855-J-G1010 for instrument tubing rating, material, and code for tubing used downstream of excess-flow-check-valves. Drawing 10855-J-G1010-3, Rev. 4, (12/13/84), shows Class 2 downstream of EFCV with Class 1 piping from the process pipe. This does not appear to be consistent with the design specification.

      2. Other Instrument Sensing Lines

         The Bechtel P&ID does not show any identification for instrument sensing lines for other applications. No note or reference "tubing" is made. A line is shown between the process pipe and instrument symbol. No information, code class, or boundaries is included. No reference to J-G-1010 appears to be made. Therefore, the P&ID does

OBSERVATION REPORT

OR No. 35, Rev. 0, Date 5/23/85

2. Description of Potential Observation: (continuation)

not appear to contain or reference the information required by Section 6.0 of the design specification.

4. Recommendation for resolution (optional): (continuation)

to the appropriate documents and drawings referenced in this observation.

b. BPC should identify the failure in the design process which resulted in this observation and how it will be corrected.

c. BPC should provide assurance that the method provided above has been used in the design, fabrication, installation, examination and testing of all ASME instrument piping.

OBSERVATION REPORT

OR No. 36, Rev. 0, Date 5/23/85

1. **Structure(s), system(s), or component(s) involved:**
Seismic Qualification Documentation Package 10855-P-305(Q) for 24" Air Operated Butterfly Valves, which contains BIF Report N50871, dated 10/2/84.

2. **Description of Observation:**
FSAR Section 3.9.3.2.7.2 identifies the active Non-NSSS valves requiring qualification and defines the methodology used to demonstrate operability. (continued on next page)

3. **Significance of Observation:**
This model could result in unconservative computation of valve frequency and stresses. In the worst case, this could result in the valves inability to operate as required in event of an earthquake.

4. **Recommendation for resolution (optional):**
a. BPC should demonstrate that the use of a potentially unconservative model for the valve yoke does not adversely affect the valve qualification.
(continued on next page)

5. **Internal Review Committee classification of Observation:**
_____ Not significant to safety (See Item 6)
_x_ Additional information required (See Item 6)
_____ Potentially Significant to Safety (See Item 8)

6. **Internal Review Committee reason for non-safety-significance of Observation or additional information required:**
Additional information is required to evaluate safety significance Provide information requested in Item 4.

7. **Internal Review Commitee Signatures:**

H S Taylor / by A Morris
Chairman

Mechanical Representative

L. R. STENSLAND / by C. M. Thoppil
Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 36, Rev. 0, Date 5/23/85

2. Description of Observation: (continuation)

There is an apparent error in the model used to compute the moment of inertia for the valve yoke. Page 2 of BIF report N50871 defines a composite moment of inertia for the valve yoke treating it as a single member. Since the yoke consists of two independent members (legs), this model may be inappropriate and may yield unconservative results.

4. Recommendation for resolution (optional): (continuation)

b. BPC should identify if this method was used to calculate the yoke section properties of other valves and if so, assure that this approach does not adversely affect the valve qualifications.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30
Page 1 of 1

OBSERVATION REPORT

OR No. 37 , Rev. 0 , Date 5/23/85

1. **Structure(s), system(s), or component(s) involved:**
HPCI System
FSAR Section 6.3.2.2.1, page 6.3-13

2. **Description of Observation:**
FSAR Section 6.3.2.2.1 states: "Start-up of the HPCI System is completely independent of ac power." However, the ECCS jockey pump is ac powered as indicated on drawing E-6431-0, Sheet 1, Rev. 2, and appears to contradict this statement.

3. **Significance of Observation:**
Without additional justification it cannot be determined that the start-up of the HPCI System is completely independent of ac power and, if not, what the potential consequences may be.

4. **Recommendation for resolution (optional):**
BPC is to provide justification for the ac powered ECCS jockey pump, assessing the effects of a momentary or extended loss of ac power on operation of the HPCI system.

5. **Internal Review Committee classification of Observation:**
_____ Not significant to safety (See Item 6)
__x__ Additional information required (See Item 6)
_____ Potentially Significant to Safety (See Item 8)

6. **Internal Review Committee reason for non-safety-significance of Observation or additional information required:**
Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. **Internal Review Commitee Signatures:**

H S Taylor / by R Moran
Chairman

Mechanical Representative

Electrical Representative

Structural Representative

Control and Instrumentation Representative

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 24 , Rev. 1 , Date 5/23/85

1. **Structure(s), system(s), or component(s) involved:**
   Damping values used in the dynamic analysis of Seismic Category 1 Action Equipment
   Equipment Qualification Report 10855-M-070(Q)-47-3(February 8,1980)
   Equipment Qualification Report 10855-E-112A(Q)-14-4,Rev. 2

2. **Description of Observation:**
   There is an apparent discrepancy between the FSAR and Regulatory Guide 1.61 regarding the damping to be used in the dynamic analysis of Seismic Category 1 Active Equipment.
   (continued on next page)

3. **Significance of Observation:**
   This apparent discrepancy may mean that the seismic qualification analysis of Seismic Category 1 Active Equipment may not be in accordance with NRC requirements.

4. **Recommendation for resolution (optional):**
   a. BPC should provide assurance that the actual damping values used in the analysis of Seismic Category 1 Active Equipment are in accordance with the Regulatory Guide.
   (continued on next page)

5. **Internal Review Committee classification of Observation:**
   _____ Not significant to safety (See Item 6)
   _____ Additional information required (See Item 6)
   _____ Potentially Significant to Safety (See Item 8)

6. **Internal Review Committee reason for non-safety-significance of Observation or additional information required:**
   Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. **Internal Review Commitee Signatures:**

H S Taylor / by a Marcus
Chairman

Mechanical Representative

L.R. STENSLAND / by C.M. Chappelle
Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT OR No. 24, Rev. 1, Date 5/23/85

2. Description of Observation: (continuation)

FSAR Section 1.8.1.61 states "HCGS complies with Regulatory Guide 1.61."

FSAR Section 3.10.2.3.1 states "The damping values are in accordance with Regulatory Guide 1.61 and IEEE-344-1975 for electrical equipment and instrumentation.

Regulatory Guide 1.61 specifies the damping values to be considered in the analysis of Seismic Category 1 Equipment as: OBE-2%
SSE-3%
except (per Note 2) in the dynamic analysis of active components where the damping for SSE should be 2%.

FSAR Tables 3.7-1 and 3.7-2 define the damping values used for analysis of NSSS and Non-NSSS equipment as: OBE-2%
SSE-3%

but do not address the NRC requirement which specifies that for SSE, 2% damping is to be used in the dynamic analysis of Seismic Category 1 Active Equipment. A review of the two subject equipment qualification reports shows that 3% damping was used for the SSE which is contrary to the Regulatory Guide 1.61 requirements for active equipment.

4. Recommendation for Resolution (optional): (continuation)

b. BPC should justify the 3% damping values for SSE defined in FSAR Tables 3.7-1 and 3.7-2 in lieu of the 2% damping required by Regulatory Guide 1.61 for the analysis of Seismic Category 1 Active Equipment.

R | c. Revise the FSAR to be consistent with a. or b. above.

d. Describe the failure in the design process that resulted in this observation.

e. Describe the process that assures the FSAR contains requirements consistent with applicable regulatory requirements.

J. L. Milhoan

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LSP-42
May 29, 1985
Project No. 7212-30

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Independent Design Verification Program
Observation Reports

Mr. W. F. Bauer
Principal Engineer
Public Service Electric and Gas Company
80 Park Plaza
Newark, New Jersey 07101

Dear Mr. Bauer:

Enclosed for your information and action is one copy each of Observation Reports Nos. 38 through 47 resulting from the IDVP of the Hope Creek Generating Station.

The Observation Reports should be reviewed and the Resolution Report sheets completed and signed by Bechtel and PSE&GC and returned as soon as possible. Return of original documents should be via Federal Express or equivalent overnight service in order to facilitate S&L's disposition of the Observation Reports.

Any questions you or Bechtel may have concerning these Observation Reports should be addressed in accordance with the Program Plan Protocol.

Yours very truly,

H. S. Taylor

H. S. Taylor
Chairman, Internal Review Committee

HST:nd
Enclosures
Copies:
J. L. Milhoan
L. C. Oesterich
P. L. Wattelet
W. A. Bloss (2)
O. Zaben
W. D. Crumpacker
T. J. Duffy
H. G. L. McCullough
R. M. Schiavoni
D. P. White

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

OBSERVATION REPORT

OR No. 38, Rev. 0, Date 5/28/85

1. **Structure(s), system(s), or component(s) involved:**
   a. Bechtel Design Specification 10855-M-067(Q), Rev. 2, for Nuclear Power Piping, ASME Section III, Class 1 (8/1/83)
   b. Bechtel Specification 10855-M-96, Rev. 0 (1/31/85)

2. Description of Observation:
   FSAR Sections 3.2.2 and 3.10 do not appear to assign a Quality Group Classification to non-in-line instrumentation. Likewise, Bechtel Specification M-96, Section 3.5.2a, states that the code
   (continued on next page)

3. Significance of Observation:
   The design specification may not provide correct design requirements for instrumentation in ASME Class I piping systems.

4. Recommendation for resolution (optional):
   a. BPC should revise Design Specification M-067 to delete ASME III applicability to non-in-line instruments.
   (continued on next page)

5. Internal Review Committee classification of Observation:
   __x__ Not significant to safety (See Item 6)
   _____ Additional information required (See Item 6)
   _____ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
   Design Specification M-067, Section 6.1.3 is in error and should be corrected. There are no regulations or codes that require non-in-line instruments to have ASME III classification.

7. Internal Review Commitee Signatures:

H S Taylor / by A Mercer
Chairman

[signature]
Mechanical Representative

L.R STENKLAND / by C. M. Chiappetta
Electrical Representative

[signature]
Structural Representative

[signature]
Control and Instrumentation Representative

OBSERVATION REPORT OR No. 38, Rev. 0, Date 5/28/85

2. Description of Observation: (continuation)

(ASME-III) does not apply to non-in-line instrumentation. Likewise, Bechtel Design Guide J2.8.2.4 (referenced in Note 17 of M-00, P&ID), Section 3.1, states that ASME does not apply, as stated in ASME-III, NA-1130.

Design Specification M-067, Section 6.1.3, indicates the design to include all pressure containing appurtenances such as pressure sensors.

If ASME Section III does not apply to instrumentation, then the design specification should be revised accordingly.

4. Recommendation for Resolution (optional): (continuation)

b. Bechtel should verify that the incorrect information in Design Specification M-067 has not been implemented in the instrumentation design.

c. Bechtel should identify the failure in the design process which resulted in this observation and how it will be corrected.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

OBSERVATION REPORT

OR No. 39, Rev. 0, Date 5/28/85

1. **Structure(s), system(s), or component(s) involved:**
Concrete Structures:
Floor system at El. 102'-0", Reactor Building, supporting SACS heat exchangers, drawing C-0803-1, Rev. 18.
Calculation 624-Q, Rev. 4

2. **Description of Observation:**
Page 571 of Calculation 624-Q, Rev. 4, indicates a possible overstress in beams Nos. 28 and corresponding beam 59. Pages 596 and 597 indicate that a knee brace would eliminate the
(continued on next page)

3. **Significance of Observation:**
The adequacy of beams Nos. 28 and 59, and/or the adjacent floor slab cannot be verified.

4. **Recommendation for resolution (optional):**
a. Provide justification for not installing knee braces for beams Nos. 28 and 59.
(continued on next page)

5. **Internal Review Committee classification of Observation:**
____ Not significant to safety (See Item 6)
_x_ Additional information required (See Item 6)
____ Potentially Significant to Safety (See Item 8)

6. **Internal Review Committee reason for non-safety-significance of Observation or additional information required:**
Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. **Internal Review Commitee Signatures:**

H S Taylor / by A Mercer
Chairman

[signature]
Mechanical Representative

L.R. STENSLAND / by [signature]
Electrical Representative

[signature]
Structural Representative

[signature]
Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 39, Rev. 0, Date 5/28/85

2. Description of Observation: (continuation)

overstress and was added to the design drawings for four other beams, but not beams Nos. 28 and 59. Subsequent pages (pages 598 and 599) of the calculations assumed that the slab would span in the direction parallel to beams to eliminate the overstress by carrying the beam. Page 600, however, indicates that the resulting shear is 231 psi versus an allowable of 126.5 psi. Page 613 of calculation 624-Q shows the beams to be marginally adequate for dead load only.

4. b. Provide assurance that all other beam modifications designed to eliminate overstresses in the beams have been installed or reconciled by calculations which does not result in an overstress in either the beam or slab.

c. Describe the process which assures that all structural calculations which indicate an overstress are reconciled.

OBSERVATION REPORT

OR No. 40 , Rev. 0 , Date 5/28/85

1. **Structure(s), system(s), or component(s) involved:**
Reactor Building basemat:
a. Calculation 621-14(Q), Rev. 0
b. Calculation 621-18(Q), Rev. 1

(continued on next page)

2. **Description of Observation:**
The calculations for the reactor building mat do not appear to consider the following:
a. The twisting moment, Mxy, in determining the design reinforcement.

(continued on next page)

3. **Significance of Observation:**
The adequacy of the reactor building basemat cannot be verified. The items addressed here should be considered with OR-7.

4. **Recommendation for resolution (optional):**
a. Show that the Reactor Building basemat design meets the FSAR requirements considering the Items a through g in 2 above.

(continued on next page)

5. **Internal Review Committee classification of Observation:**
_____ Not significant to safety (See Item 6)
__x__ Additional information required (See Item 6)
_____ Potentially Significant to Safety (See Item 8)

6. **Internal Review Committee reason for non-safety-significance of Observation or additional information required:**
Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. **Internal Review Commitee Signatures:**

H S Taylor / by A Mray
Chairman

Mechanical Representative

L.R. STENSLAND / by C. M. Chappitta
Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 40, Rev. 0, Date 5/28/85

1. Structure(s), system(s), or component(s) involved: (continuation)

   c. Calculation 621-17(Q), Rev. 0
   d. Calculation 621-15(Q), Rev. 0

2. Description of Observation: (continuation)

   b. The torus uplift loading in determining the design moments and shears.
   c. The thermal loading in determining the design moments and shears.
   d. The design of the vertical construction joints.
   e. Section 9.2.1.2(d) of ACI 318-71 where Ø varies from 0.7 to 0.9 for beam-column design (621-15(Q).
   f. The seismic inertial forces due to containment flooding in determining design moments and shears.
   g. The weight of water due to containment flooding should not have been included in the bouyancy calculation since it results in a higher factor of safety.

4. Recommendation for Resolution (optional): (continuation)

   b. Provide assurance that Items a through g are included in other basemat designs, or if not included, provide justification for omitting them.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

OBSERVATION REPORT

OR No. 41, Rev. 0, Date 5/28/85

1. **Structure(s), system(s), or component(s) involved:**
   Class 1E 125V and 250V Battery Chargers

2. **Description of Observation:**
   FSAR Section 8.3.2.1.2.3 states that the battery charger is capable of supplying the largest DC steady-state load and recharging the battery from the design minimum charge state
   (continued on next page)

3. **Significance of Observation:**
   Basing the charger capacity on actual amp-hours removed from the battery rather than the minimum design charge state of the battery may result in the charger not having sufficient
   (continued on next page)

4. **Recommendation for resolution (optional):**
   BPC is to reconcile the battery charger sizing calculations and the FSAR to reflect a consistent basis for sizing. If necessary, this reconciliation should include revising FSAR
   (continued on next page)

5. **Internal Review Committee classification of Observation:**
   ____ Not significant to safety (See Item 6)
   _x_ Additional information required (See Item 6)
   ____ Potentially Significant to Safety (See Item 8)

6. **Internal Review Committee reason for non-safety-significance of Observation or additional information required:**
   Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. **Internal Review Commitee Signatures:**

H S Taylor / by [signature]
Chairman

[signature]
Mechanical Representative

L.R. STENSLAND / by C. W. [signature]
Electrical Representative

[signature]
Structural Representative

[signature]
Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 41, Rev. 0, Date 5/28/85

2. Description of Observation: (continuation)

within 12 hours. Battery and battery charger sizing Calculations 4.1(Q), Rev. 4, 10/12/84, Class 1E 125V DC Station Battery and Battery Charger Sizing, and 5.1(Q), Rev. 2, 3/14/84, Class 1E 250V DC System (a) Station Battery Sizing (b) Station Battery Charger Sizing, identify the minimum cell voltage as 1.75V (i.e., design minimum charge state). The required charger capacity, however, was based on the actual amp-hours removed from the battery rather than the design minimum charge state of 1.75v per cell. There is an apparent discrepancy between the FSAR commitment and the battery charger sizing calculation.

3. Significance of Observation: (continuation)

capaci' ' to satisfy the FSAR commitment. It appears that the battery charger sizing calculation does not demonstrate the same degree of conservatism as committed to in the FSAR.

4. Recommendation for Resolution (optional): (continuation)

statements concerning battery recharge time.

BPC is to identify the process that controls the updating of the FSAR to keep it current with the design, as well as the process that assures that FSAR commitments are correctly incorporated into design calculations.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 42, Rev. 0, Date 5/28/85

1. **Structure(s), system(s), or component(s) involved:**
Conduits Supports:
Conduit Support Type R-3, Detail R-12 as shown on drawing E-1406, sheet 3.24.652.1, Rev. 1

2. **Description of Observation:**
It appears that no calculations have been prepared for the conduit support detail R-12.

3. **Significance of Observation:**
The adequacy of conduit support Type R-3, Detail R-12 cannot be verified.

4. **Recommendation for resolution (optional):**
a. Prepare calculations for conduit support Type R-3, Detail R-12.

(continued on next page)

5. Internal Review Committee classification of Observation:
_____ Not significant to safety (See Item 6)
__x__ Additional information required (See Item 6)
_____ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. Internal Review Commitee Signatures:

H S Taylor / by A Mozes
Chairman

Mechanical Representative

L.R. Stensland / by C.W. Clapsaddle
Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT OR No. 42, Rev. 0, Date 5/28/85

4. Recommendation for Resolution (optional): (continuation)

   b. Provide assurance that calculations have been prepared for all other conduit support details.
   c. Identify the failure in the design control process that resulted in this observation and how it will be corrected.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 43, Rev. 0, Date 5/28/85

1. **Structure(s), system(s), or component(s) involved:**
HVAC duct support connections: Type M and DJ
Calculation 625-11(Q), Rev. 4, Drawing C-0330-0(Q), Rev. 14
Calculation 625-30(Q), Rev. 2, Drawing C-0334-0(Q), Rev. 13

2. **Description of Observation:**
It appears that calculations have not been prepared for all HVAC duct support connections.

3. **Significance of Observation:**
The adequacy of the HVAC duct support connections cannot be verified.

4. **Recommendation for resolution (optional):**
a. Provide calculations for connections in HVAC duct supports.
b. BPC should identify breakdown in design process which permitted the release of HVAC duct supports without
(continuted on next page)

5. **Internal Review Committee classification of Observation:**
_____ Not significant to safety (See Item 6)
__x__ Additional information required (See Item 6)
_____ Potentially Significant to Safety (See Item 8)

6. **Internal Review Committee reason for non-safety-significance of Observation or additional information required:**
Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. **Internal Review Commitee Signatures:**

H S Taylor / by A Marcus
Chairman

E B Brandt
Mechanical Representative

L. R. Stensland / by C. W. Chiavetta
Electrical Representative

B A Boka
Structural Representative

R J Gunn
Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 43, Rev. 0, Date 5/28/85

4. Recommendation for Resolution (optional): (continuation)

calculations for the connections.

c. BPC should provide assurance that their design process has sufficient control to ensure that other connections in component supports have not been released without supporting calculations.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 44 , Rev. 0 , Date 5/28/85

1. **Structure(s), system(s), or component(s) involved:**
Mechanical Auxiliary support steel:
Drawing 1-P-FD-001-H03(Q), Rev. 3;
Calculation 1-P-FD-001-C10, Rev. 0
(continued on next page)

2. **Description of Observation:**
The following items have not been addressed in the calculations:
a. The member and connection stresses from the self weight of the component hardware (both supports) and auxiliary support steel (support 1-P-FD-001-H01(Q). (continued on next page)

3. **Significance of Observation:**
The adequacy of the supports cannot be verified.

4. **Recommendation for resolution (optional):**
a. Provide justification for not including stresses due to self weight and seismic self weight excitation in the design of pipe support 1-P-FD-001-H01(Q).
(continued on next page)

5. Internal Review Committee classification of Observation:
_____ Not significant to safety (See Item 6)
__x__ Additional information required (See Item 6)
_____ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. Internal Review Commitee Signatures:

H S Taylor / by A Mecca
Chairman

Mechanical Representative

L.R. STENSLAND / by C.W. Chapatta
Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT OR No. 44, Rev. 0, Date 5/28/85

1. Structure(s), system(s), or component(s) involved:

   Drawing 1-P-EG-125-H01(Q), Rev. 1;
   Calculation 1-P-EG-125-C1, Rev. 1

2. Description of Observation: (continuation)

   b. The member and connection stresses from the seismic self weight excitation of the component hardware and auxiliary support steel.

   c. The effects of load eccentricity on the auxiliary support steel due to the location of the pipe in the hot position.

4. Recommendation for Resolution (optional): (continuation)

   b. Provide justification for not including eccentricity of the load on the auxiliary steel due to location of the pipe in hot position.

   c. Provide assurance that the effects of self weight, seismic self weight excitation and eccentricities in the design of auxiliary support steel have been adequately accounted for.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 45 , Rev. 0 , Date 5/28/85

1. **Structure(s), system(s), or component(s) involved:**
Reactor Building Structural Steel Floor Framing at Elevation 102'-0":
Calculation 624-2(Q), Rev. 4
Vendor Drawing M69(Q)-13, Rev. I
(continued on next page)

2. **Description of Observation:**
The calculations for the reactor building steel floor framing do not appear to consider the following:
a. For beams 29 and 33, the axial load in the member and its connections due to the added knee brace.
(continued on next page)

3. **Significance of Observation:**

The adequacy of the floor framing cannot be verified.

4. Recommendation for resolution (optional):
a. Provide justification for not considering items a through g in 2 above for the design of the Reactor Building structural steel floor framing.
(continued on next page)

5. Internal Review Committee classification of Observation:
_____ Not significant to safety (See Item 6)
__x__ Additional information required (See Item 6)
_____ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:

Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. Internal Review Commitee Signatures:

H. Taylor / by A. Marcus
Chairman

Mechanical Representative

L. R. Stensland / by C. M. Churchilla
Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT OR No. 45 , Rev. 0 , Date 5/28/85

1. Structure(s), system(s), or component(s) involved: (continuation)

   Design Criteria D2.1, Rev. 7
   Vendor Calculation M69(Q)-16, Rev. 3

2. Description of Observation: (continuation)

   b. Location of SACS heat exchanger loads as shown on outline drawing and vendor calculation.

   c. Calculations use a uniform versus point loads for the SACS heat exchanger.

   d. SSE and thermal loads per D2.1.

   e. 50 psf and 5 kips concentrated loads per D2.1.

   f. Connection capacities.

   g. Frequencies of the beams to justify the use of a rigid zone "g" value.

4. Recommendation for resolution (optional): (continuation)

   b. Provide assurance that other structural steel framing includes the applicable effects in their calculations.

   c. Identify the failure in the design control process that resulted in this observation and how it will be corrected.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 46 , Rev. 0 , Date 5/28/85

1. **Structure(s), system(s), or component(s) involved:**
Calculation 17A(Q), Control Transformer Selection and Maximum Circuit Wire Lengths for MCC Control Circuits, Rev. 0, dated approved 4/4/83 and 4/4/84.

2. **Description of Observation:**
Engineering Department Procedure 4.37, Sections 6.0.3 and 6.0.4 state: "3. If sheets are added to a completed calculation, only the added sheets will be identified with the next revision
(continued on next page)

3. **Significance of Observation:**
The potential exists for using outdated calculations as a basis for design.

4. **Recommendation for resolution (optional):**
a. BPC should revise the calculation per procedure EDP-4.37 and verify that the revised calculation has been utilized in the design process.
(continued on next page)

5. Internal Review Committee classification of Observation:
_____ Not significant to safety (See Item 6)
__X__ Additional information required (See Item 6)
_____ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. Internal Review Commitee Signatures:

H S Taylor / by A Marcus
Chairman

Mechanical Representative

L.R. STENSLAND / by C. M. Chiapetta
Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT OR No. 46 , Rev. 0 , Date 5/28/85

2. Description of Observation: (continuation)

number of letter..." and "4. Description of the revision of the calculation cover sheet shall indicate the sheets revised or added." Contrary to this Calculation 17A(Q), prepared on 4/1/83, checked on 4/4/83 and approved on 4/4/83, consisting of 17 sheets was identified as Rev. 0, while Calculation 17A(Q), prepared on 4/1/84, checked on 4/4/84 and approved on 4/4/84, consisting of 18 sheets was also identified as Rev. 0. That is, a calculation was apparently revised (by adding an additional sheet) without the revision status being changed or the description of revision being indicated on the cover sheet.

4. Recommendation for Resolution (optional): (continuation)

b. BPC is to identify the failure in the design control process that resulted in this observation.

c. BPC is to provide assurance that this observation is an isolated occurrence and not indicative of a generic problem for calculations controlled by EDP-4.37.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

OBSERVATION REPORT

OR No. 47, Rev. 0, Date 5/28/85

1. **Structure(s), system(s), or component(s) involved:**
Environmental Qualification Report for ASCO Solenoid Valves, J601(Q)

2. **Description of Observation:**
There is an apparent failure to meet a licensing requirement of 10CFR50.49.

(continued on next page)

3. **Significance of Observation:**
In the absence of consideration of all significant temperature effects, it is not possible to arrive at a conclusion regarding the qualified life of the solenoid valves.

4. **Recommendation for resolution (optional):**
a. BPC/PSE&G should justify the methodology used to evaluate thermal effects on qualification life or

(continued on next page)

5. Internal Review Committee classification of Observation:
____ Not significant to safety (See Item 6)
__x__ Additional information required (See Item 6)
____ Potentially Significant to Safety (See Item 8)

6. Internal Review Committee reason for non-safety-significance of Observation or additional information required:
Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. Internal Review Commitee Signatures:

H S Taylor / by A Marcos
Chairman

[signature]
Mechanical Representative

L.R. STENSLAND / by C M. Chiappetta
Electrical Representative

[signature]
Structural Representative

[signature]
Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 47, Rev. 0, Date 5/28/85

2. Description of Observation: (continuation)

10CFR50.49, Paragraph e.5, states that "Equipment qualified by test must be preconditioned by natural or artificial (accelerated) aging to its end-of-installed life condition. Consideration must be given to all significant types of degradation which can have effect on the functional capability of the device."

In order to determine the qualified life, degradation from thermal aging must be considered. This must include:

- normal, abnormal, and accident temperature profiles associated with the areas where the devices are installed.
- temperature rise due to coil energization, and
- the duration of the energized state

In determining the qualified life of the subject valves, the environmental qualification report does not consider the temperature rise due to the energized state of the solenoid valves (e.g., coils).

4. Recommendation for Resolution(optional): (continuation)

b. BPC/PSE&G should provide specific information as to how the observation has or will be corrected. Will the environmental qualification report be revised? and,

c. BPC/PSE&G should assure that there are no other equipment qualification reports which neglect applicable thermal effects in establishing qualified equipment life.

J. L. Milhoan
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LSP-43
May 31, 1985
Project No. 7212-30

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Independent Design Verification Program
Observation Reports

Mr. W. F. Bauer
Principal Engineer
Public Service Electric and Gas Company
80 Park Plaza
Newark, New Jersey 07101

Dear Mr. Bauer:

Enclosed for your information and action is one copy each of Observation Reports Nos. 48 and 50 resulting from the IDVP of the Hope Creek Generating Station.

The Observation Reports should be reviewed and the Resolution Report sheets completed and signed by Bechtel and PSE&GC and returned as soon as possible. Return of original documents should be via Federal Express or equivalent overnight service in order to facilitate S&L's disposition of the Observation Reports.

Also, we are enclosing Observation Report No. 29, Revision 1, dated May 31, 1985. Please note the changes on page two.

Any questions you or Bechtel may have concerning these Observation Reports should be addressed in accordance with the Program Plan Protocol.

Yours very truly,

H. S. Taylor

H. S. Taylor
Chairman, Internal Review Committee

HST:nd
Enclosures
Copies:
J. L. Milhoan
L. C. Oesterich
P. L. Wattelet
W. A. Bloss (2)
O. Zaben
W. D. Crumpacker
T. J. Duffy
H. G. L. McCullough
R. M. Schiavoni
D. P. White

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

OBSERVATION REPORT

OR No. 48, Rev. 0, Date 5/31/85

1. **Structure(s), system(s), or component(s) involved:**
HPCI Pump Discharge Flow Instrument Loop, P&ID M-55-1, Rev. 12, dated 12/06/84, GE Elementary Diagram 791E420AC, Sheet 9, Rev. 14, dated 11/02/84

2. **Description of Observation:**
P&ID M-55-1 and Elementary Diagram 791E420AC were reviewed to verify FSAR commitments with the following discrepancies:

(continued on next page)

3. **Significance of Observation:**
   a. Discrepancies on the P&ID could cause errors in the design, due to differences between BPC documents and GE documents.

(continued on next page)

4. **Recommendation for resolution (optional):**
   a. BPC should confirm the discrepancies noted in this OR and correct the appropriate documents.

(continued on next page)

5. **Internal Review Committee classification of Observation:**

_____ Not significant to safety (See Item 6)
__X__ Additional information required (See Item 6)
_____ Potentially Significant to Safety (See Item 8)

6. **Internal Review Committee reason for non-safety-significance of Observation or additional information required:**
Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. **Internal Review Commitee Signatures:**

H. S. Taylor
Chairman

E. J. Branch
Mechanical Representative

L.R. STENSLAND / by C.M. Chiesnetta
Electrical Representative

B.G. Ezler
Structural Representative

R.L. Swain
Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 48, Rev. 0, Date 5/31/85

2. Description of Observation: (continuation)

   a. The P&ID shows the square root extractor FY-K601 as located on panel C650, GE Elementary Diagram 791E420AC shows FY-K601 as located on panel H11-P620, the correct location for FY-K601 is H11-P620. The P&ID M-55-1 should be revised.

   b. The GE Elementary Diagram shows flow transmitter FT-N008 connected to square root converter FY-K601, then connected to controller cards E41-K600-1 through 4 then connected to E41-R600-1 flow indicator. The P&ID shows flow transmitter FT-N008 connected to square root converter FY-K601 then connected to flow indicating controller FIC-R600. The BPC P&ID and instrument index does not show controller cards E41-K600-1 through 4, or flow indicator E41-R600-1. The BPC design documents do show FIC-K600 for the above instruments. BPC apparently does not identify instruments that they do not have to buy or install. FIC-K600 is BPC designation for the controller instruments shown on the GE Elementary Diagram.

3. Significance of Observation: (continuation)

   b. The discrepancies between the BPC documents and the GE documents, could cause discrepancies in testing and calibration.

   c. Without a complete and consistent device designation system, device identification for equipment qualification can be incomplete and erroneous.

4. Recommendation for Resolution (optional): (continuation)

   b. BPC should provide assurance that the discrepant information was not implemented in the design.

   c. BPC should provide an explanation of the "system" utilized to number instrument type devices and an explanation of how the system meets the requirements including device testing and calibration, qualification testing, and interdiscipline design.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

OBSERVATION REPORT

OR No. 50, Rev. 0, Date 5/31/85

1. **Structure(s), system(s), or component(s) involved:**
Pipe support:
Drawing 1-P-FD-001-H02, H03(Q), Rev. 3
FCR E-4215, 3/27/84
(continued on next page)

2. **Description of Observation:**
Conduits were attached to pipe supports 1-P-FD-001-H02(Q) and H03(Q). The conduit loads on these supports were given in FCR E-4215 and E-4104; however, there is no documentation for the basis of these loads shown on the FCR.

3. **Significance of Observation:**
The pipe/conduit support cannot be evaluated because calculations of conduit support loads are not available.

4. Recommendation for resolution (optional):
a. Prepare and submit calculations for conduit loads attached to supports 1-P-FD-001-H02 (Q) and H03(Q).
(continued on next page)

5. Internal Review Committee classification of Observation:
_____ Not significant to safety (See Item 6)
__x__ Additional information required (See Item 6)
_____ Potentially Significant to Safety (See Item 8)

6. **Internal Review Committee reason for non-safety-significance of Observation or additional information required:**
Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. **Internal Review Commitee Signatures:**

H. S. Taylor
Chairman

[signature]
Mechanical Representative

L.R. STENSLAND /by C. M. Chiappetta
Electrical Representative

[signature]
Structural Representative

[signature]
Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 50, Rev. 0, Date 5/31/85

1. Structure(s), system(s), or components(s) involved:
   FCR E-4104, 3/14/[illegible]4

4. Recommendation for Resolution (optional): (continuation)

   b. Provide assurance that supporting calculations exist for all conduit loads attached to pipe support steel.

   c. Describe the process to assure that calculations are prepared to support FCR's.

Public Service Electric and Gas Company
Hope Creek Generating Station - Unit 1

Project No. 7212-30

OBSERVATION REPORT

OR No. 29 , Rev. 1 , Date 5/31/85

1. **Structure(s), system(s), or component(s) involved:**
Bechtel Design Specification 10855-M-068(Q), Rev. 1, for Nuclear Power Piping, ASME-III, Class 2 and 3 (1/31/79)

2. **Description of Observation:**
FSAR Section 3.2 commits to ASME Section III. Section III, NA-4410, Design Controls, requires stress reports to be reviewed for compliance with Design Specifications.
(continued on next page)

3. **Significance of Observation:**
There is a possibility that stress reports and other design documents may be incorrect because the applicable Design Specification is apparently out-of-date. There is a
(continued on next page)

4. **Recommendation for resolution (optional):**
a. Bechtel should re-review and revise the Design Specification to bring it up-to-date.
Provide assurance that the stress reports and the overall design is compatible with the new revisions.(continued on next pag

5. **Internal Review Committee classification of Observation:**
_____ Not significant to safety (See Item 6)
__x__ Additional information required (See Item 6)
_____ Potentially Significant to Safety (See Item 8)

6. **Internal Review Committee reason for non-safety-significance of Observation or additional information required:**
Additional information is required to evaluate safety significance. Provide information requested in Item 4.

7. **Internal Review Commitee Signatures:**

H. S. Taylor
Chairman

Mechanical Representative

L. R. STENSLAND /by C. M. Chiapetta
Electrical Representative

Structural Representative

Control and Instrumentation Representative

OBSERVATION REPORT

OR No. 29, Rev. 1, Date 5/31/85

2. Description of Observation: (continuation)

R | Several OR's have identified apparent deficiencies in the Design Specification (ORs 13, 25, 26, 27, 28 and 29). Therefore, it is not apparent how the required reviews of stress reports have been accomplished with the design specification containing numerous inconsistencies.

3. Significance of Observation: (continuation)

possibility that the QA requirements of ASME Section III may not be met.

4. Recommendation for Resolution (optional): (continuation)

R | b. Bechtel should identify the cause of these discrepancies, the design control process which should have prevented them, and why that process did not prevent the discrepancies.

c. Describe the process that assures that Design Specifications are kept current with design requirements.

d. Bechtel should provide assurance that the observation is an isolated occurrence and that all other ASME III Design Specifications have been updated on a timely basis.