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

JUN 4 1984

Docket No.: 50-412

APPLICANT: Duquesne Light Company

FACILITY: Beaver Valley Power Station, Unit 2 (BVPS-2)

SUBJECT: MECHANICAL ENGINEERING AUDIT SUMMARY

A three day meeting was held with Duquesne Light Company (DLC) from April 3 to April 5, 1984 at the offices of Stone and Webster Engineering Corporation (SWEC) in Boston, Massechusetts. In addition to SWEC, Duquesne Light Company was accompanied by representatives from Westinghouse Electric Corporation. The NRC was represented by members of the Division of Licensing and Division of Engineering, and accompanied by contracted personnel from Pacific Northwest Laboratory and Oak Ridge National Laboratory (ORNL). A complete list of attendees is included as Enclosure 1.

The primary purpose of the meeting was to discuss DLC responses to the Mechanical Engineering Branch (MEB) questions. Included in the three-day meeting agenda were preliminary arrangements for a design documentation review and a SWEC presentation on overthick fittings.

Questions and Responses

A total of 38 MEB questions were discussed. These were 210.4 through 210.41, transmitted to DLC by NRC letter dated February 9, 1984. Many of these questions correspond to open items in the BVPS-2 draft Safety Evaluation Report (DSER). The applicant presented draft responses to the NRC and then solicited an NRC preliminary review. The current status of all questions is presented in Enclosure 2. Questions listed as closed are closed pending formal submittal of the responses discussed. DLC agreed to provide these formal responses to the NRC by May 7, 1984. Twenty-two of the responses were determined closed with no necessary modifications. Three responses qualified as closed but with minor and mutually agreed upon changes (210.7, 210.21 and 210.36). Responses to questions 210.5 and 210.9 are now classified as confirmatory. The following eleven questions are still open. Their corresponding draft SER open item numbers are shown in parenthesis.

210.10	Pipe to pipe impact	(28)
210.12	Jet impingement effects	(26)
210.27	Combining 3 components of earthquake motion	(36)
210.28	Explanation of Equation 3.7B-18	(40)
210.31	HVAC system design	
210.32	Loading combinations system operating transient, and stress limits	(39)
210.34	Design and construction of ASME Class 1,2, and 3 component supports	(42)

210.37 Maintenance records for snubbers
210.39 Design criteria for component supports categorizing stresses
210.40 Integrity of RCS isolation valves
210.41 Preservice and inservice testing of pumps & valves (43)

Accelerated efforts are required to resolve Q210.32. After an indepth discussion of this question, DLC agreed to incorporate staff guidance and submit to the NRC their proposed methodology for resolving this issue as soon as available. SWEC stated that the final response would be submitted to DLC in time to meet the July 2, 1984 deadline for transmittal to the NRC.

Design Documentation Review

As a part of the MEB licensing review under Standard Review Plan 3.9.3, the staff plans to review with ORNL assistance, design documentation for BVPS-2 components on an audit basis. The documentation to be reviewed for each selected component will include the design specification and related stress or design reports.

At the meeting, the following components were identified for the audit review.

(1) Service Water Pump
(2) Moter Operated Butterfly Valve
(3) Piping and Piping Supports

The specific documents required for this audit were identified and SWEC agreed to transmit copies of these documents to ORNL.

Overthick Fittings

In response to NRC letter to DLC dated January 27, 1984, SWEC gave a presentation to demonstrate the acceptability of the effect of oversized fittings on equipment nozzle loads, piping restraints, and piping other than ties and elbows for thermal expansion loadings. Overall, the NRC staff was pleased and encouraged by the presentation. In addition to the information presented, the staff suggested that the following items be included in the final submittal:

1. Address the effects of overthickness where the stress intensification factor (SIF) for elbows equals one.
2. Provide assurance that the piping systems analyzed were representative of those found in nuclear power plants.
3. For the BVPS-2 faulted load combination it was proposed that thermal loads would not be combined with normal and SSE loads. The conclusions arrived in the presentation are based on normal, thermal and SSE loads being combined. Address the applicability of these conclusions to the faulted conditions in BVPS-2.

SWEC expressed their preference to submit the information as a self-contained addendum to the report transmitted to the NRC on October 25, 1983. The staff accepted this proposal. An estimated submittal date of June 30, 1984 was reached. Although this issue is not an open item in the BVPS-2 draft SER, it is important to the staff's review. The staff requested that the slides from the presentation be submitted to allow the NRC review to continue while awaiting the formal addendum submittal.

Before adjourning, the results of the three day meeting were highlighted, and the current status of the MEB questions was confirmed.

Marilyn Ley

Marilyn Ley, Project Manager
Licensing Branch 3
Division of Licensing

Enclosures:
As stated

cc: See next page

Mr. Earl J. Woolever
Vice President, Nuclear Construction
Duquesne Light Company
Robinson Plaza Building, No. 2, Suite 210
PA Route 60
Pittsburgh, Pennsylvania 15205

Gerald Charnoff, Esq.
Jay E. Silberg, Esq.
Shaw, Pittman, Potts & Trowbridge
1800 M Street, N.W.
Washington, DC 20036

Mr. H. M. Siegel, Manager Engineering
Beaver Valley Two Project
Duquesne Light Company
Robinson Plaza Building No. 2
Suite 210
PA Route 60
Pittsburgh, Pennsylvania 15205

Mr. C. W. Ewing, Quality Assurance Manager
Quality Assurance Department
Duquense Light Company
P. O. Box 186
Shippingport, Pennsylvania 15077

Zori Ferkin
Assistant Counsel
Governor Energy Council
1625 N. Front Street
Harrisburg, PA 15105

Mr. R. J. Washabaugh
BV-2 Project Manager
Duquense Light Company
Robinson Plaza Building No. 2
Suite 210
Pittsburgh, Pennsylvania 15205

Director, Pennsylvania Emergency Management Agency
Room B-151
Transportation & Safety Building
Harrisburg, Pennsylvania 17120

Mr. T. J. Lex
Westinghouse Electric Corporation
Power Systems
P. O. Box 355
Pittsburgh, Pennsylvania 15230

Mr. Thomas Gerusky
Bureau of Radiation Protection
PA Department of Environmental Resources
P. O. Box 2063
Harrisburg, Pennsylvania 17120

Mr. P. RaySircar
Stone & Webster Engineering Corporation
P. O. Box 2325
Boston, Massachusetts 02107

BVPS-2 Records Management Supervisor
Duquesne Light Company
Post Office Box 4
Shippingport, Pennsylvania 15077

Mr. Glenn Walton
U. S. NRC
P. O. 181
Shippingport, Pennsylvania 15077

John A. Lee, Esq.
Duquesne Light Company
1 Oxford Centre
301 Grant Street
Pittsburgh, Pennsylvania 15279

Mr. Thomas E. Murley, Regional Admin.
U. S. NRC, Region I
631 Park Avenue
King of Prussia, Pennsylvania 15229

Mr. E. F. Kurtz, Jr., Manager
Regulatory Affairs
Beaver Valley Two Project
Duquense Light Company
Robinson Plaza Buidling No. 2
Suite #210
PA Route 60
Pittsburgh, Pennsylvania 15205

Enclosure 1

Meeting Attendees

NRC and Consultants

E. A. Licitra
M. Ley
D. Terao
H. L. Brammer
J. M. Alzheimer (PNL)
E. Rodabaugh (ORNL)
S. E. Moore (ORNL)

Duquesne Light Company

E. F. Kurtz, Jr.
G. L. Beatty
J. Szy Slow Ski
P. A. Cadema
C. Hill
.. A. Troxler
W. V. Pfrommer
S. K. Mukherjee

Westinghouse

C-W Lin
R. Orr
F. Scapellato
A. M. Sicari
S. D. Phillips

Stone and Webster

J. Sutton
J. Spizuoca
F. Gharahi
R. A. Loranger
D. A. Van Duyne
R. Obadiah
J. Elder
N. P. Sacco
N. A. Goldstein
K. L. Polk
R. F. Hawkinson
R. J. Spahl
J. P. Camobrew
R. S. Benson
G. H. East
P. Ray Sircar
A. L. Van Sickel
C. O. Richardson
S. L. Stamm
W. F. Emerson
J. F. Allen

Observers

P. J. Quinlan (NUSCO)
J. L. Majewski (Northeast Utilities)

Enclosure 2

Status of MEB Questions as of April 5, 1984 *

Question	SER Open Item #	Status	Remarks
210.4	25	closed	
210.5	27	confirmatory	drawings will be provided to show pipe lengths of break exclusion zones.
210.6	24	closed	
210.7		closed	DLC will add clarification in reference to 3.11 and 3.6
210.8		closed	
210.9	31A	confirmatory	DLC will provide pipe break information on high energy lines in future submittals.
210.10	28	open	DLC will provide a summary on the acceptance criteria for jet impingement targets.
210.11		closed	
210.12	26	open	DLC will provide the format to be employed for jet impingement effects
210.13	29	closed	
210.14	30	closed	
210.15		closed	
210.16	31B	closed	
210.17		closed	
210.18	32	closed	
210.19		closed	
210.20		closed	
210.21	34	closed	DLC will add a third paragraph for steady state vibrations.
210.22	35	closed	

Question	dSER Open Item #	Status	Remarks
210.23	33	closed	
210.24		closed	
210.25	38	closed	
210.26		closed	
210.27	36	open	NRC will review
210.28		open	NRC will review
210.29	37	closed	
210.30		closed	
210.31	40	open	DLC will provide response in a later submittal
210.32	39	open	DLC will provide response in later submittal
210.33	41	closed	
210.34	42	open	NRC will review
210.35		closed	
210.36		closed	DLC will clarify subscripts on Table 3.9N-3
210.37		open	DLC will provide PSI program in a future submittal
210.38		closed	
210.39		open	NRC will review
210.40		open	DLC will provide PSI program in a future submittal
210.41	43	open	DLC will provide PSI an IST program in a future submittal

*Pending DLC formal submittal of responses

MEETING SUMMARY DISTRIBUTION

Docket No(s): 50-412
NRC PDR
Local PDR
NSIC
PRC System
LB3 Reading
Attorney, OELD
GWKnighton
Project Manager M. Ley
JLee

NRC PARTICIPANTS

E. A. Licitra
M. Ley
D. Terao
H. L. Brammer
J. M. Alzheimer(PNL)
E. Rodabaugh (ORNL)
S. E. Moore (ORNL)

bcc: Applicant & Service List

Docket No.: 50-412

APPLICANT: Duquesne Light Company

FACILITY: Beaver Valley Power Station, Unit 2 (BVPS-2)

SUBJECT: MECHANICAL ENGINEERING AUDIT SUMMARY

A three day meeting was held with Duquesne Light Company (DLC) from April 3 to April 5, 1984 at the offices of Stone and Webster Engineering Corporation (SWEC) in Boston, Massechusetts. In addition to SWEC, Duquesne Light Company was accompanied by representatives from Westinghouse Electric Corporation. The NRC was represented by members of the Division of Licensing and Division of Engineering, and accompanied by contracted personnel from Pacific Northwest Laboratory and Oak Ridge National Laboratory (ORNL). A complete list of attendees is included as Enclosure 1.

The primary purpose of the meeting was to discuss DLC responses to the Mechanical Engineering Branch (MEB) questions. Included in the three-day meeting agenda were preliminary arrangements for a design documentation review and a SWEC presentation on overthick fittings.

Questions and Responses

A total of 38 MEB questions were discussed. These were 210.4 through 210.41, transmitted to DLC by NRC letter dated February 9, 1984. Many of these questions correspond to open items in the BVPS-2 draft Safety Evaluation Report (DSER). The applicant presented draft responses to the NRC and then solicited an NRC preliminary review. The current status of all questions is presented in Enclosure 2. Questions listed as closed are closed pending formal submittal of the responses discussed. DLC agreed to provide these formal responses to the NRC by May 7, 1984. Twenty-two of the responses were determined closed with no necessary modifications. Three responses qualified as closed but with minor and mutually agreed upon changes (210.7, 210.21 and 210.36). Responses to questions 210.5 and 210.9 are now classified as confirmatory. The following eleven questions are still open. Their corresponding draft SER open item numbers ane shown in parenthesis.

210.10	Pipe to pipe impact	(28)
210.12	Jet impingement effects	(26)
210.27	Combining 3 components of earthquake motion	(36)
210.28	Explanation of Equation 3.7B-18	(40)
210.31	HVAC system design	
210.32	Loading combinations system operating transient, and stress limits	(39)
210.34	Design and construction of ASME Class 1,2, and 3 component supports	(42)

OFFICE							
SURNAME							
DATE							

210.37 Maintenance records for snubbers
210.39 Design criteria for conponent supports categorizing stresses
210.40 Integrity of RCS isolation valves
210.41 Preservice and inservice testing of pumps & valves (43)

Accelerated efforts are required to resolve Q210.32. After an indepth discussion of this question, DLC agreed to incorporate staff guidance and submit to the NRC their proposed methodology for resolving this issue as soon as available. SWEC stated that the final response would be submitted to DLC in time to meet the July 2, 1984 deadline for transmittal to the NRC.

Design Documentation Review

As a part of the MEB licensing review under Standard Review Plan 3.9.3, the staff plans to review with ORNL assistance, design documentation for BVPS-2 components on an audit basis. The documentation to be reviewed for each selected component will include the design specification and related stress or design reports.

At the meeting, the following components were identified for the audit review.

(1) Service Water Pump
(2) Moter Operated Butterfly Valve
(3) Piping and Piping Supports

The specific documents require for this audit were identified and SWEC agreed to transmit copies of these documents to ORNL.

Overthick fittings

In response to NRC letter to DLC dated January 27, 1984, SWEC gave a presentation to demonstrate the adceptability of the effect of oversized fittings on equ p-ment nozzle loads, piping restraints, and piping other than ties and elbows for thermal expansion loadings. Overall, the NRC staff was pleased and encouraged by the presentation. In addition to the information presented, the staff suggested that the following items be included in the final submittal:

1. Address the effects of overthickness where the stress intensification factor (SIF) for elbows equals one.
2. Provide assurance that the piping systems analyzed were representative of those found in nuclear power plants
3. For the BVPS-2 faulted load combination it was proposed that thermal loads would not be combined with normal and SSE loads. The conclusions arrived in the presentation are based on normal, thermal and SSE loads being combined. Address the applicability of these conclusions to the faulted conditions in BVPS-2.

SWEC expressed their preference to submit the information as a self-contained addendum to the report transmitted to the NRC on October 25, 1983. The staff accepted this proposal. An estimated submittal date of June 30, 1984 was reached. Although this issue is not an open item in the BVPS-2 draft SER, it is important to the staff's review. The staff requested that the slides from the presentation be submitted to allow the NRC review to continue while awaiting the formal addendum submittal.

Before adjourning, the results of the three day meeting were highlighted, and the current status of the MEB questions was confirmed.

Marilyn Ley, Project Manager
Licensing Branch 3
Division of Licensing

Enclosures:
As stated

cc: See next page

OFFICE	DL:LB#3	DL:LB#3	DL:LB#3				
SURNAME	MLey/dl	EALicitra	GWKnighton				
DATE	5/30/84	5/31/84	5/ 1 /84				