10419

RELATED CORRESPONDENCE

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OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

before the

ATOMIC SAFETY AND LICENSING BOARD

In the Matter of VERMONT YANKEE NUCLEAR POWER CORPORATION (Vermont Yankee Nuclear Power Station)	Docket No. 50-271-OLA-4 (Construction Period Recapture)

ANSWERS OF VERMONT YANKEE NUCLEAR POWER CORPORATION TO INTERROGATORIES PROPOUNDED BY THE STATE OF VERMONT

Pursuant to 10 C.F.R. § 2.740b, Vermont Yankee Nuclear Power Corporation hereby responds to the interrogatories propounded to it by the State of Vermont. (By stipulation, the time within which these responses were due was enlarge to May 30, 1990.)

General Response Regarding Documents: In each case in which a document is identified hereinafter to be available, the documents will be produced for inspection and copying at either (i) the offices of Vermont Yankee Nuclear Power Corporation, in Brattleboro, (ii) the Vermont Yankee Nuclear Power Station in Vernon or (iii) Nuclear Services Division, Yankee Atomic Electric Company, Bolton, Massachusetts (depending on document location) on a date and time to be agreed upon by counsel.

Interrogatory No. 1.

Interrogatory:

1. Please identify all persons who participated in the preparation of answers to these interrogatories and production requests:

   a. Describe in detail the specific portions of each response to which each person contributed.

   b. Provide the most current resumé available for each identified individual.

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c. Describe the qualifications of each identified individual, including training and papers published.

Response:

The persons who participated in the preparation of these answers to interrogatories, exclusive of counsel, are as follows:

Individual	Organization	Interrogatories
Donald A. Reid	VYNPC	All
Francis J. Helin	VYNPC	All
H. Michael Metell	VYNPC	42, 60
Robert E. Sojka	VYNPC	17, 18, 114
Kathy M. Casey	VYNPC	115
Robert J. Wanczyk	VYNPC	2, 3, 8, 16, 50, 51, 52, 53, 54, 116, 117, 122
Terry A. Watson	VYNPC	55, 56, 122
Richard P. Lopriore	VYNPC	57, 69, 123
David L. Phillips	VYNPC	57, 59, 61, 62, 64, 65, 66, 67, 68
Gary Cappuccio	VYNPC	6, 7
Dennis C. Girroir	VYNPC	8, 9, 32, 33, 119
James M. DeVincentis	VYNPC	9, 19, 118
Mark Stello	VYNPC	32, 33, 119
Michael V. Ball	VYNPC	21
Patrick B. Corbett	VYNPC	22, 23, 24, 25, 99, 100, 101
Richard G. Mossey	VYNPC	71
Kevin H. Bronson	VYNPC	72, 73
Randall W. Spinney	VYNPC	78

James C. Kinsey	VYNPC	44
Charles Rice	LRS	102, 103, 104
R. L. Smith	YNSD	10, 11, 20, 27, 28, 29, 30, 31, 36, 37, 38, 39, 40, 41, 109
W. K. Peterson	YNSD	10, 11, 16, 25, 39, 40
P. J. Donnelly	YNSD	15, 16, 121
M. P. Saniuk	YNSD	22, 23, 25, 47, 48
R. E. Swenson	YNSD	24, 25, 41, 43, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93
E. J. Betti	YNSD	25, 43, 70
K. J. Burns	YNSD	26
L. A. Tremblay	YNSD	74, 75, 76, 77, 78, 79, 94, 95, 96, 97, 98, 110, 111, 112

It should be understood, however, that drafts of answers were reviewed by, and information used in preparing answers was assembled by, persons not identified in the foregoing list.

a. See above table.

b. Resumés are available for inspection.

c. This information is contained in the resumés.

Interrogatory No. 2.

Interrogatory:

2. Identify each and every supervisor who has been responsible for maintenance or surveillance activities at the Vermont Yankee plant at any time since January 1, 1988. As to each such person, provide the following information:

   a. What was his or her precise responsibility or responsibilities for maintenance and/or surveillance at the Vermont Yankee plant?

   b. Identify each and every structure, system and component upon which he or she supervised maintenance or surveillance work.

c. Describe in detail the precise instructions he or she received in the performance of his or her maintenance tasks.

d. Describe in detail the manner in which he or she received instructions.

1) Who provided the instruction?

2) In what form was it provided?

3) Identify all documentation that exists to verify that the instructions were provided and received.

e. Identify his or her dates of employment by Vermont Yankee.

f. Describe any changes in responsibilities while employed with Vermont Yankee, and identify the effective dates of these changes.

g. For each person identified, state his or her qualifications and training, and provide the most current resumé available.

Response:

A list of individuals having supervisory responsibility for maintenance and surveillance activities since 1/1/88 is provided on Attachment 2-1 to these answers.

a. The responsibilities of these individuals are described in written job descriptions maintained by the personnel department, which job descriptions are available for inspection.

b. It is reasonable to expect that these individuals could have supervised work in any area of the plant to which they were assigned, indicated by their responsibilities and job descriptions provided in response to part a. In addition, our maintenance and surveillance records, such as maintenance request sign offs (AP 0021), surveillance sheet sign off's and tag out request sheets (AP-0140) indicate the supervisor responsible for the accomplishment of the various maintenance and surveillance activities and are available for inspection.

c. The specific instructions that control the accomplishment of maintenance and surveillance activities at Vermont Yankee can be found in surveillance and maintenance procedures. These procedures are identified in the response to Interrogatory No. 14. Additionally these personnel are provided formalized training in the accomplishment of various specific maintenance tasks from the training department and

experienced job incumbents or, at times, training is provide directly from the vendor for certain components. Additionally training is provided in generic topics such as "troubleshooting," reading of drawings, and the like.

Additional instruction may be provided by the Department Supervisor(s) or other management, as appropriate. The level of detail of any additional instruction provided by the department supervisor(s) depends on the nature of the activity, and the experience level of the personnel involved. In most cases this type of instruction is verbal and therefore the precise details of such instruction is not documented. In general the type of instruction given to supervisors deals with priorities, availability of resources, special operational considerations, etc.

d. Instructions given to maintenance and surveillance supervisors are for the most part contained in procedures. Additional instruction is provided as described above with respect to sub-part c.

1) The procedures that control maintenance and surveillance activities are considered "Management Directives" and as such are reviewed and approved by management. Also as stated in response to part c., instruction can be provided by the Training Department staff, more experienced workers, or directly from vendors.

Generally any additional direction is provided through the line management organization. However, specific instructions can come from other parts of the organization as is indicated by the department procedures. An example is the direction from a shift supervisor, or Health Physics Technician regarding plant conditions.

2) This instruction can be either formal or informal and occur in the classroom, shop, or the plant. However, the actual accomplishment of any maintenance or surveillance tasks is governed by the appropriate procedure.

3) The verification that these instructions were received is documented in job order files, Maintenance Request sign-offs, and in satisfactory post-maintenance and operational testing. These records are available for inspection.

Procedures govern the accomplishment of all tasks, and ensure that any work done is done in accordance with approved management directives as indicated by AP-0831 "plant procedures". Copies of procedures which provide instructions to supervisors are available on site for inspection. Any instructor guide (IG) is also available for inspection.

e. This information is provided in Attachment 2-1.

f. See Attachment 2-1.

g. The entry level qualifications are contained in the job descriptions mentioned in 2a., above. Training is provided in accordance with the INPO accredited training program and copies of training records are available in our Training Dept. Copies of resumes are available in our personnel department.

Interrogatory No. 3.

Interrogatory:

3. Identify each and every Vermont Yankee employee who has been responsible for or has performed maintenance or surveillance activities at the Vermont Yankee plant at any time since January 1, 1988. As to each such person, provide the following information:

   a. What was his or her precise responsibility or responsibilities for maintenance and/or surveillance at the Vermont Yankee plant?

   b. Identify each and every structure, system and component upon which he or she performed maintenance or surveillance work.

   c. Describe in detail the precise instructions he or she received in the performance of his or her maintenance tasks.

   d. Describe in detail the manner in which he or she received instructions.

      1) Who provided the instruction?

      2) In what form was it provided?

      3) Identify all documentation that exists to verify that the instructions were provided and received.

   e. Identify his or her dates of employment by Vermont Yankee.

f. Describe any changes in responsibilities while employed with Vermont Yankee, and identify the effective dates of these changes.

g. For each person identified, state his or her qualifications and training, and provide the most current resume available.

Response:

A listing of all Vermont Yankee employees having responsibility for, or who have performed maintenance and surveillance activities since 1/1/88 is provided on Attachment 3-1 to these answers.

a. The responsibilities of these individuals is described in written job descriptions, which are available for inspection.

b. It would be extremely time consuming (and perhaps impossible) to identify each and every structure, system or component on which any particular individual performed maintenance or surveillance work, since our records are not maintained in that fashion. It is reasonable to expect, however, that they could have performed work in any area they were assigned. In the I&C Department, personnel initial maintenance requests for all work for which they were a part of the work party.

c. See response to 2(c), above regarding procedural compliance, training and additional instructions.

The level of detail of additional instruction depends on the nature of the activity, and the experience level of the person who will be performing it. This information is typically discussed and therefore the precise details of such instruction are not retained. In general, the discussion would include items such as: safety, parts availability, ALARA, plant conditions, and the like.

d. See response to question 2.d.

e. This information is provided in Attachment 3-1.

f. Provided in Attachment 3-1.

g. Resumés, as such, do not exist for the personnel in question (at least in the Company's records).

Interrogatory No. 4.

Interrogatory:

4. Identify each and every contract employee who has been responsible for or has performed maintenance or surveillance activities at the Vermont Yankee plant at any time since January 1, 1988. As to each such person, provide the following information:

   a. What was his or her precise responsibility or responsibilities for maintenance and/or surveillance while under contract and working at Vermont Yankee?

   b. Identify each and every structure, system and component upon which he or she performed maintenance or surveillance work.

   c. Describe in detail the precise instructions he or she received in the performance of his or her maintenance tasks.

   d. Describe in detail the manner in which he or she received instructions.

      1) Who provided the instruction?

      2) In what form was it provided?

      3) Identify all documentation that exists to verify that the instructions were provided and received.

   e. Identify his or her dates of contract employment by Vermont Yankee.

   f. Describe any changes in responsibilities while under contract to Vermont Yankee, and identify the effective dates of these changes.

   g. For each person identified, state his or her qualifications and training, and provide the most current resumé available.

Response:

A listing of contract employees who were badged for unescorted access since January 1, 1989, is available for inspection. This list does not, however, distinguish between employees who had responsibility for maintenance tasks and those who did not. However, for any given contract employee, a reference should be available to a specific contract, which would reveal the nature of the jobs for which the person was hired. These documents are likewise available for inspection.

a. See above.

b. See above.

c. For longer term contract personnel, instruction would be provided in the same manner as is described in the response to Interrogatories 2 and 3, above. For job-specific contractor personnel, training is tailored to the particular task for which the personnel have been engaged.

d. Instruction would be provided in the same manner as is described in the response to Interrogatories 2 and 3, above, and the applicable documentation would be of the same type.

e. This information is available from the records described in the introductory paragraph of this response.

f. This information is available from the records described in the introductory paragraph of this response.

g. This information is available from the records described in the introductory paragraph of this response.

Interrogatory No. 5.

Interrogatory:

5. Identify each and every licensed control room operator, senior control operator, and shift supervisor who is currently employed by Vermont Yankee, or has been in your employ at any time since January 1, 1988. (Please note: The information for operators is requested based on opinions reported in the Report #3-88 of LRS Incorporated, quoted in sub-part j of Contention VII.) As to each such person, provide the following information:

   a. The dates of employment at Vermont Yankee.

   b. All changes in responsibilities while employed at Vermont Yankee, and the effective date to each such change.

   c. For each person identified, state his or her qualifications and training, and provide the most current resumé available.

Response:

A listing of licensed control room operators, senior control room operators and shift supervisors since 1/1/88 is provided on Attachment 5-1.

a. See Attachment 5-1.

b. See Attachment 5-1.

c. Resumés are available for your review in our Personnel Department. The entry level qualifications are contained in the job descriptions. Training is provided in accordance with the INPO accredited training program and copies of training records are available in our Training Department.

Interrogatory No. 6.

Interrogatory:

6. Please describe in detail the current licensing basis for each structure, system and component of the Vermont Yankee plant.

Response:

The VYNPS licensing basis is the set of requirements established by the following sources:

Facility Operating License (including Technical Specifications).
Applicable Commission Regulations.
Certain NRC orders (those amounting to license amendments).
Certain Licensee commitments.

Vermont Yankee has developed an index that includes a reference to the documents contributing to the current licensing basis, which index is known as the Engineering Design Basis Manual. The Engineering Design Basis Manual, and the source documents indexed therein, are available for inspection.

Interrogatory No. 7.

Interrogatory:

7. For each of the items described in the preceding question:

a. State whether the current licensing basis is different from the licensing basis when the Vermont Yankee plant was originally granted its operating license.

b. If the current licensing basis is different from the original licensing basis, identify each and every document which caused the licensing basis to change from its original basis.

Response:

Please note that this question assumes that there is a "licensing basis" document separately for each system, structure and component comprising Vermont Yankee. This is not correct. There is a licensing basis for the plant, and the systems, structures and components must satisfy it. Thus this question cannot be answered precisely as framed. Nonetheless, to the extent that information of this sort exists (or information of a different sort was intended to be elicited), the information can be derived from the documents described in the response to Interrogatory No. 6.

Interrogatory No. 8.

Interrogatory:

8. Identify each and every person who has been responsible for reviewing maintenance requests or work orders for the Vermont Yankee plant with regard to the current licensing basis of structures, systems and components, or with regard to the regulatory or safety impact of the request or work orders, at any time since January 1, 1988. As to each such person, provide the following information:

   a. What was his or her precise responsibility or responsibilities?

   b. Identify each and every structure, system and component upon which he or she determined the current licensing basis or determined the regulatory or safety impact.

   c. Describe in detail the precise instructions he or she received for the performance of his or her review of maintenance requests or work orders.

   d. Describe in detail the manner in which he or she received instructions.

      1) Who provided the instruction?

      2) In what form was it provided?

      3) Identify all documentation that exists to verify that the instructions were provided and received.

e. Identify his or her dates of employment by Vermont Yankee.

f. Describe any changes in responsibilities while employed with Vermont Yankee, and identify the effective dates of these changes.

g. For each person identified, state his or her qualifications and training, and provide the most current resumé available.

Response:

A list of individuals responsible for the review of Maintenance Requests is provided as Attachment 8-1.

a. Procedure AP 0021 ("Maintenance Requests") describes the process used to repair plant components. As noted in that procedure, maintenance, operations and engineering support department personnel and supervisors are responsible for the review of maintenance requests. Vermont Yankee employees treat the potential "safety impact" of tasks assigned to them as an integral part of their responsibilities. The potential impact of maintenance requests on the "licensing basis" or the design basis is reviewed by the Quality Assurance Coordinator ("QAC") and the Engineering Support Supervisor ("ESS"). Any plant maintenance that potentially impacts the current licensing basis is accomplished via a plant or engineering design change or plant alteration, as defined in AP 6000, 6004, 6003, respectively. The duty Shift Supervisor has the responsibility of system Safety Class determination. The repair department head has the responsibility for component safety class determination. The precise responsibilities of these individuals with regard to this review is set forth in procedure AP-0021.

b. The maintenance requests reviewed by any specific individual are available for inspection.

c. Each QAC person receives training in ASME Section XI scope and requirements. The QAC and ESS personnel receive training in plant procedures: AP 6000 (Plant Design Change Requests), AP 6003 (Plant Alteration Requests), AP 6004 (Engineering Design Change Request), AP 0021 (Maintenance Request), and AP 6022 (Job Order Files).

d. The QAC instruction is performed formally by the Vermont Yankee Training Department and informally by the departing QAC or by the Senior QA Engineer. ESS instruction in the use of the applicable procedures is performed formally by the Vermont Yankee Training

Department. Documentation of formal training is maintained by the Training Department and is available for inspection.

e. This information is contained in Attachment 8-1.

f. This information is contained in Attachment 8-1.

g. These resumes are available for inspection.

Interrogatory No. 9.

Interrogatory:

9. Explain how personnel identified in the preceding question are able to access the current licensing basis for structures, systems and components. In your response, please provide the following information:

   a. Identify all procedures which control or establish this review of current licensing basis.

   b. Is the current licensing basis maintained in a central location, accessible to personnel responsible for maintenance review?

   c. Is the current licensing basis distributed by a controlled distribution? If yes, please respond to the following:

      1) Identify the names of the documents in this distribution.

      2) Identify the procedure by which these documents are controlled and distributed.

      3) Identify the dates and describe in detail the contents of the last five revisions to these documents.

   d. Is the current licensing basis maintained in a format accessible by computer? If yes, please respond to the following:

      1) Identify the manual and descriptive information which describe the computer program, including how to access information in the current licensing basis by structure, system or component.

      2) Identify the procedure by which this computer data base is controlled.

      3) How is the modification of this computer data base controlled?

      4) Who may modify this computer data base?

5) In what ways is the data base modified?

6) How are modifications to this data base verified as correct?

e. Is the current licensing basis for these reviews considered to be the FSAR? If yes, please respond to the following:

1) Does the FSAR contain the complete current licensing basis for each and every structure, system and component?

2) If the response to the above is negative, how does the reviewer include the missing portions of the current licensing basis in his or her review?

3) Is the FSAR indexed in detail by structure, system, and component? If not, describe how the reviewer is able to assure himself or herself that all of the licensing basis has been considered (for example, an electrical requirement that is embedded within the accident analyses assumptions)?

f. If the current licensing basis is not maintained for the maintenance reviewer by either of the methods of b, c, d or e above, then:

1) Please describe the method by which the current licensing basis is available to the reviewer.

2) Identify all documents relied upon for this review.

3) Describe the qualifications and provide the most current resumé available and employment history at Vermont Yankee for all personnel relied upon for this review.

Response:

a. The requirements of the current licensing basis are enveloped by the Vermont Yankee procedures and policies used by personnel to conduct maintenance activities. This is ensured through procedure development and review as controlled by AP 0831 "Plant Procedures." The discussion section of that procedure states: "Administrative controls (procedures) are necessary for the safe and efficient operation and maintenance of the plant and to ensure compliance with license limitations, technical specification requirements, state and federal controls and established safe work practices."

In cases where procedure changes may involve changes to the licensing basis, they receive a safety evaluation per the requirements of 10 C.F.R. § 50.59.

As discussed above, VY implements licensing basis review through the operating procedures. Therefore, it is not always necessary for personnel to directly review the licensing basis, since it is captured in the necessary procedures. Examples of this type of procedure are:

AP 0021	"Maintenance Request"
AP 0013	"Replacement of Environmentally Qualified Equipment"
AP 6000	"Plant Design Change Requests"
AP 6002	"Preparing 50.59 Safety Evaluations"
AP 6004	"Engineering Design Change Requests"

A detailed review of the licensing basis is accomplished during the preparation of all design changes (EDCR or PDCR).

b. Yes.

c. Yes.

1) The documents in this distribution are identified in the response to question 6. Additionally, as stated in sub-part a, the requirements of the current licensing basis are enveloped by the Vermont Yankee policies and procedures used by personnel to conduct maintenance activities.

2) Distribution is controlled by Document Control Procedure AP-6805. Complete distribution lists are available for review.

3) The specifics of revisions to these documents, including revision date, are available from an inspection of the documents.

d. Yes. Statements of the licensing basis as extracted from the VY FSAR and regulatory correspondence are contained in the controlled document entitled "Engineering Design Basis Manual." These identical items are in a computer data base.

1) Instructions for user access to the computer data base are contained in the "Engineering Design Basis Manual."

2) The procedure by which this data base is controlled is contained in the "Engineering Design Basis Manual."

3) The data base is password protected to assure only authorized data entry, deletion, or modification.

4) The data base may be modified only by authorized personnel, as set forth in the "Engineering Design Basis Manual."

5) Modification is by addition, revision or deletion of record, as appropriate given modifications of the "Engineering Design Basis Manual."

6) Verification of modifications to the data base are made by using a data entry form that requires signature of the preparer and of a reviewer for each individual record.

e. Not exclusively. See the response to Interrogatory No. 6.

f. Not applicable.

Interrogatory No. 10.

Interrogatory:

10. State the dates of any and all quality assurance audits since January 1, 1988, which reviewed the adequacy of the process of reviewing maintenance requests or work orders with regard to the current licensing basis or regulatory or safety impact of the request or work order. Identify all the results of these audits, including audit reports, reports to management, audit check lists, informal check lists and hand written notes.

Response:

VY-88-06	Maintenance	Issued 12/30/88
VY-89-06A	Maintenance	Issued 10/13/89

Other documents the identification of which is called for are identified in these two reports.

Interrogatory No. 11.

Interrogatory:

11. State the dates of any and all quality assurance audits since January 1, 1988, which reviewed the adequacy of the process of maintaining the current licensing basis in a current and correct condition. Identify all the results of these audits, including audit reports, reports to management, audit check lists, informal check lists and hand written notes.

Objection:

Vermont Yankee objects to this interrogatory on the ground that the subject thereof is not within the scope of the admitted contention.

Response:

Without waiving this objection, but rather expressly relying upon the same, the following audits may be of the sort of which identification is requested:

VY-88-07	Plant Changes	1/11/89
VY-88-15	Technical Specifications	5/20/88
VY-88-01	Operations	1/24/89
NSD-88-03	Design - VY Project	1/9/89
VY-89-07	Plant Changes	10/31/89
VY-89-15	Technical Specifications	6/15/89
NSD-89-03	Design - VY Project	5/26/89
NSD-90-03	Design - VY Project	5/7/90
VY-89-01	Operations	8/2/89

Other documents the identification of which is called for are identified in these reports.

Interrogatory No. 12.

Interrogatory:

12. Please identify all documents for which copies or access were provided to NRC Maintenance Team Inspectors for the inspection reported on Inspection Report No. 50-271/89-80. These documents should include those identified in Appendix 1 of Inspection Report No. 50-271/89-80 (also attached as Appendix 1 to this set of interrogatories), as well as any other documents provided to or reviewed by NRC inspectors.

Response:

The documents provided to the NRC Maintenance Team Inspectors in response to their requests for documents contained in Appendix 1 of Inspection Report No. 50-271/89-80 are as follows:

Organization Chart
1987 and 1988 System Maintenance Request/Plant Maintenance List
Schedule for Surveillance Testing
I&C Department Maintenance and Commitment Tracking List
AP 0021 (8/7/89)
AP 0020 (8/12/87)
AP 0022 (12/18/89)
AP 0310 (5/4/90)
MR Training List
The following Training Program Instruction Guides:
- CEM-02-002 Rev. 0
- AIC-06-001 Rev. 0
- CMM-10-006 Rev. 1
- XIC-88-02 Rev. 0
- CIC-01-002 Rev. 0
- CMM-04-005 Rev. 0
- AEM-06-001 Rev. 1
- ACH-02-001L Rev. 0

VY Procedure Writers Guide
VY Comparative Performance Indicator Report
Performance Monitoring Memo
AP 0028 (5/5/89)
AP 0200 (7/1/89)
Supervisor's Guide - Performance Appraisal
1989 Plant Goals
Maintenance Department Organization Chart
1988 Maintenance Requests (Index)
System Problem List
Instrument & Controls Maintenance Request (Index)
Shutdown Work List
OP 4257 (6/3/89)
OP 5223 (6/3/89)
OP 5225 (8/7/89)
OP 4124 (9/25/89)
OP 5212 (7/31/89)
OP 5304 (12/2/89)
OP 4209 (2/3/90)
OP 4214 (5/13/90)

OP 5361 (11/13/89)
OP 4100 (8/12/89)
OP 4123 (2/2/89)
OP 4205 (2/3/90)
OP 4211 (3/2/89)
OP 4256 (4/25/90)
OP 5221 (6/3/89)
MR 87-3250
MR 88-0223
MR 87-2446
MR 88-2963
MR 88-0308
OP 5220 (5/12/89)
OP 5337 (5/4/89)
RP 5338 (3/16/90)
Outage Schedule Notebook
VYNPC Plant Mechanic Training Program Description
VYNPC I&C Specialist Training Program Description
Maintenance Training Program Procedure Review Matrix
AP 0125
Outage Meeting Minutes (1/28/89)
Maintenance Work Schedule (Six Week)
Maintenance Work Schedule (90-Day)
Maintenance Work Schedule (Weekly)
OP 0505
OP 0502
OP 0506
ALARA Committee Meeting 89-01 Agenda
Technical Information Tracking Process
Vendor Equipment Technical Information Program (VETIP) Block Diagram
Direct Vendor Interface
OP 5219
OP 4203
OP 4337
OP 4126
OP 4257
OP 5223
OP 5225
OP 5361
OP 4100
OP 4123
OP 4124
OP 4144
OP 4205

OP 4207
OP 4209
OP 4211
OP 4212
OP 4213
OP 4214
OP 4245
OP 4256
AP 5212
OP 5221
OP 5222
OP 5304
Safety Manual
Memo JPP to Distribution "1989 Safety Committee Election"
VYNPC Joint Safety Committee Charter

In addition, the inspectors had access to any VY procedure, policy or design document that might have been requested. Requested documents include:

SSFI Open and Closed Commitment Items (as tracked by VY's AP 0028 process).
MR 88-1004
Class 1E Instrument List
Valve V10-13C PM History
July, 1988, Radiation Protection Incident Report (pertaining to tagging of TIP machines prior to drywell or TIP room entry).

Additional records may have been requested and provided during the inspection, but no records of any documents that may have been provided or inspected beyond the foregoing were kept.

Interrogatory No. 13.

Interrogatory:

13. For all revisions to the documents identified in question 12 since the maintenance team inspection:

    a. Please identify the location and nature of each revision.

    b. Please describe in detail the reason each revision has been made.

Response:

The revision history for each of the documents identified in the foregoing interrogatory can be derived from an inspection of the current revision of the document itself.

Interrogatory No. 14

Interrogatory:

14. Please identify each and every document, in addition to those in response to interrogatory 12 above, which constitutes the maintenance program upon which the licensee relies for the license extension sought in the application. Please organize your response in the following categories:

    a. Each and every written procedure.

    b. Each and every industry standard, recommendation or practice.

    c. Each and every NRC requirement.

    d. Each and every vendor recommendation.

    e. Every other document relied upon.

Response:

Subject to the qualification stated at the foot of this response:

The VYNPS procedures that bearing primarily upon maintenance and surveillance are as set forth on Attachment 14-1 to these answers. To the extent that any of the classes of items identified in sub-parts b-e of the interrogatory are components of the formal program, they have been captured in the procedures.

Please note that the foregoing describes the procedural "maintenance program" as it exists as of the date of these interrogatories. To the extent that the interrogatory implies either that the "maintenance program" is fixed, or that the nature of the maintenance program as it will exist in 2007 is presently determinable, the implication is in error. What Vermont Yankee refers to in the cited portion of Attachment 2 to the Application for an operating license amendment in this proceeding is the entirety of the maintenance function, which generally means the function of ensuring that structures, systems and components continue in service to achieve their design function, as that function has been performed by Vermont Yankee for the

last 18 years, including the commitment of Vermont Yankee, as an organization, to perform that function and the ability of Vermont Yankee, as a organization, to perform that function. The reference in Attachment 2 is not, therefore, to any specific document or procedure, or any specific method of implementation.

Interrogatory No. 15.

Interrogatory:

15. Specifically identify all maintenance documents produced since or as a result of the maintenance team inspection. This identification should include the "comprehensive and formal maintenance program document" identified in BVY 89-75.

Response:

Vermont Yankee "Maintenance Program," Rev. 0 (12/89).
AP 0312 ("Equipment Technical Information") Rev. 0.
AP 0021 ("Maintenance Requests") Rev. 16.
AP 0140 ("VY Local Control Switching Rules") and Rev. 13.

The revision history of the procedures identified on Attachment 14-1 can be derived from an inspection of the current revision of each procedure. Please note that this interrogatory was interpreted refer to procedures, not to output (product) documents, such a maintenance requests, trend reports, and the like.

Interrogatory No. 16.

Interrogatory:

16. Please respond to the following concerning the vendor manual update program:

    a. Identify the person or persons who have performed or are performing the vendor manual update. For each such person, state his or her technical qualifications, and provide the most recent resume available.

    b. Identify the procedure(s) which govern(s) the vendor manual update program.

    c. Identify the date of any and all quality assurance audits of:

        i. The status of vendor manuals.

ii. The progress of the vendor manual update program.

iii. The adequacy of the vendor manual update program.

d. Identify the documentation of the results of the audits identified in sub-part c, including audit reports, reports to management, audit check lists, handwritten check lists, and informal notes.

e. As of the date of response to these interrogatories, what percentage of the vendor manuals for safety-related structures, systems and components has not been updated?

f. Identify each vendor manual included in the percentage provided for the above sub-part e, *i.e.*, that has not been updated.

g. As of the date of response to these interrogatories, what percentage of the vendor manuals for nonsafety-related structures, systems and components has not been updated?

h. Identify each vendor manual included in the percentage provided for the above sub-part g, *i.e.*, that has not been updated.

Response:

a. The vendor manual update project was the responsibility of the Maintenance Superintendent, utilizing a contract engineering service to supply technical reviewers. The Maintenance Superintendent has had 18 years of service in the maintenance organizations at VYNPS. Technical reviewers supplied by the contract engineering firm were evaluated for their past experience at other nuclear facilities in similar types of assignments. All had a minimum of five years experience in the review and preparation of maintenance technical documents such as procedures and technical reviews. One individual was previously an Instrument & Controls Department foreman at the VY plant site. Regular interface with the Maintenance and Instrument & Controls Departments' technical personnel was an integral part of the update process. Resumés for all technical reviewers as well as for the Maintenance Superintendent are available for inspection. The program continues for the remaining safety-related vendor documents under the direction of the Operations Superintendent, whose resumé is also available for inspection.

b. AP 0312 ("Equipment Technical Information")
AP 0028 ("Operating Experience Review and Assessment/Commitment Tracking")

c. VY-89-06a Maintenance 10/13/89.
VY-88-06 Maintenance 12/30/88

These reports, and any documentation referred to therein, are available for inspection.

d. See sub-part (c).

e. As of 5/3/90, 27% of the safety related vendor manuals have not been reviewed (and updated as required).

f. A listing of those safety-related manuals is provided as Attachment 16-1.

g. The program does not apply to non-safety related manuals.

h. The program does not apply to non-safety related manuals.

Interrogatory No. 1

Interrogatory:

17. Please identify all documents related to the "Computerized Maintenance Material Management System (CMMMS)" referred to in BVY 89-75, including the development plan referred to in BVY 89-75, all assessment documentation referred to in BVY 89-86, the system description, bid specification, purchase specification, and all internal and external correspondence, with attachments.

Response:

VYNPC referred to the development of a CMMMS in a response to an NRC Maintenance team inspection conducted at VYNPS between February 27 and March 10, 1989. See BVY-89-75, dated 8/11/89.) An unrelated document (BVY-89-86, dated 9/25/89) also referred to preliminary scoping work for a CMMMS.

Other documents that relate to CMMMS include staff assignments, objectives, meeting minutes, and preliminary budget estimates. These documents are primarily authored by Mr. Robert E. Sojka, who was assigned the responsibility of evaluating CMMMS. They are available for inspection and consist of the following:

Nolan Norton Report (12/88)

Meeting Minutes - VYBS 89/76 (6/12/89
Position Description (8/7/89)
Objectives - VYBS 89/99 (8/7/89)
Staff Assignments - VYBS 89/107 (8/8/89)
Meeting Minutes - VYBS 89/106 (9/5/89)
Budget Issues - VYBS 89/113 (9/19/89)
Budget Issues - VYBS 89/114 (9/20/89)
Budget Issues - VYBS 89/121 (9/28/89)

Interrogatory No. 18.

Interrogatory:

18. For the CMMMS identified in the interrogatory above, please respond to the following:

    a. If a CMMMS supplier has been chosen, identify the supplier.

    b. If a CMMMS supplier has been chosen, state in full the qualifications of the supplier to provide a CMMMS.

    c. If a CMMMS supplier has not been chosen, identify each supplier who is on your approved bidders list, or from whom you have received, or expect to receive, a bid.

    d. If bids have been received, provide the date upon which they were received and identify the suppliers who provided bids.

    e. If bids have not been received, provide the date upon which bids are expected, or, if that date cannot be determined, the date and identification of the next schedule milestone for the CMMMS.

Response:

a. Not applicable.

b. Not applicable.

c. See below.

d. Bonner & Moore Consulting Services
2727 Allen Parkway
Houston, Texas 77019

EI International, Inc.
201 Benton Avenue

Suite 204
Linthicum, Maryland 21090

Champs Software, Inc.
1255 North Vantage Point Drive
Crystal River, Florida 32629

The System Works, Inc.
1640 Powers Ferry Road
Marietta, Georgia 30067

All bids were received on or before May 4, 1990.

e. Not applicable.

Interrogatory No. 19.

Interrogatory:

19. Please identify all documents related to containment integrity testing (i.e., testing in accordance with 10 CFR 50, Appendix J) during the life of the Vermont Yankee plant, including all test reports, licensee event reports, test results, calibration records, internal memoranda, maintenance requests, correspondence, and contractor records.

Objection:

Vermont Yankee objects to this interrogatory to the extent that it is related to proposed Contention 6 and proposed Contention 8, sub-part "m," which were excluded by the Board.

Response:

Without waiving its objection to this interrogatory, but rather expressly relying upon the same, Vermont Yankee provides the following information:

The VYNPS program for compliance with the requirements of 10 C.F.R., Part 50, Appendix J is known as the Vermont Yankee Primary Containment Leak Rate Testing Program, implemented by procedures OP-4029 (Type A Integrated Leak Rate Testing) and OP-4030 (Types B and C testing). Documentation includes data sheets recording the results of the tests and documentation showing close out of test results. Such documentation is available for inspection. In addition, a comprehensive report is prepared and submitted to the NRC following the completion of the Type A test, and these

reports are also available for inspection, and NRC includes a section discussing each Type A test in its regular Inspection Reports for VYNPS.

Interrogatory No. 20.

Interrogatory:

20. Please list of all structures, systems and components. Your attention is directed to the definition of structures, systems and components, and specifically part b) of the definition, "structures, systems and components whose failure can cause or adversely affect a transient or accident that significantly challenges structures, systems and components relied upon for the integrity of the reactor coolant pressure boundary, safe shutdown, or accident mitigation." In your response, please include the physical location of each component.

Response:

This information is contained in FSAR. Layout drawings showing major component/structure locations and arrangement are provided as figures throughout the FSAR. Chapter 14 discusses the response of the plant to transients and accidents.

Interrogatory No. 21.

Interrogatory:

21. Please identify "the plant master equipment list for safety-related equipment" that is referenced in Enclosure 1 of BVY 89-75.

Response:

The item called for is known as the Master Equipment List or MEL. The MEL identifies the safety classification of components in safety-related systems. The safety class was initially determined by reference to P&ID and one-line wiring diagrams. Any future changes to this database are effected in accordance with the directions in the Safety Class Manual.

Interrogatory No. 22.

Interrogatory:

22. Please identify by revision number and date the current or most recent Master Equipment List for Environmentally Qualified (EQ) equipment that is referenced in Enclosure 1 of BVY 89-75.

Objection:

Vermont Yankee objects to this interrogatory on the grounds that it appears to be related only to proposed Contention 6, sub-part "t," which was excluded by the Board.

Interrogatory No. 23.

Interrogatory:

23. Please identify all documents which describe the environmental conditions of each area of the Vermont Yankee plant evaluated as part of your 10 CFR 50.49 evaluation, including those areas considered to be mild environments.

Objection:

Vermont Yankee objects to this interrogatory on the same grounds as apply to Interrogatory No. 22.

Interrogatory No. 24.

Interrogatory:

24. Please identify all documents which describe the environmental conditions of each area of the Vermont Yankee plant, not provided as part of the above interrogatory, which house systems or components whose failure can cause or adversely affect a transient or accident that significantly challenges structures, systems and components relied upon for the integrity of the reactor coolant pressure boundary, safe shutdown, or accident mitigation.

Objection:

Vermont Yankee objects to this interrogatory on the same grounds as apply to Interrogatory No. 22.

Interrogatory No. 25.

Interrogatory:

25. Regarding qualified life, design life and installed life:

    a. Please list, in the format of the listing provided in interrogatory 20 (or alternatively, the formats of the lists from interrogatories 21 and 22, plus any additional structures, systems and components not appearing on these lists), the

qualified life, design life and installed life of each structure, system and component in the Vermont Yankee plant.

b. Please indicate with specificity the bases for the qualified life, design life and installed life of the structures, systems and components. For each document upon which you rely, identify the document and state the precise location within the document which provides the qualified life, design life and installed life for each for each structure, system and component.

c. Describe and identify documents which describe the manner in which qualified life, design life or installed life is determined or demonstrated for each structure, system or component. Describe and identify this information specifically for the following categories of Vermont Yankee plant equipment (Your attention is directed to the definition section for the meaning of "safety-related" and "nonsafety-related"):

1. Safety-related electrical components located in areas subjected to harsh environments for which the exclusion of 10 CFR 50.49(k) *is* applied.

2. Safety-related electrical components located in areas subjected to harsh environments for which the exclusion of 10 CFR 50.49(k) *is not* applied.

3. Safety-related electrical components located in areas subjected to mild environments.

4. Nonsafety-related electrical components located in areas subjected to harsh environments.

5. Nonsafety-related electrical components located in areas subjected to mild environments.

6. Safety-related mechanical components located in areas subjected to harsh environments.

7. Safety-related mechanical components located in areas subjected to mild environments.

8. Nonsafety-related mechanical components located in areas subjected to harsh environments.

9. Nonsafety-related mechanical components located in areas subjected to mild environments.

10. Safety-related and nonsafety-related structures.

d. In the response to sub-part c above, identify all written procedures which govern the determination of qualified life, design life and installed life of each category of equipment.

e. Identify the dates of all quality assurance audits since January 1, 1988, which reviewed the adequacy of the process of determining qualified life or design life of structures, systems and components. Identify all the results of these audits, including audit reports, reports to management, audit check lists, informal check lists and handwritten notes.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to relate only to proposed Contention 6, which was excluded by the Board.

Interrogatory No. 26.

Interrogatory:

Please identify all documents available to you providing failure rate information on the structures, systems and components of the Vermont Yankee plant. Include data which is industry wide and data which is Vermont Yankee plant specific.

Response:

Interpreting the term "failure rate information" to mean data that accounts both for the number of failures and the number of operating hours, in-service hours, demands, or other measure of use, we are aware of the following data sources:

The Nuclear Plant Reliability Data System (industry-wide).

Vermont Yankee Response to USNRC Request for Additional Information - Surveillance Testing of ECCS and SLC Equipment, FVY 88-58 (7/15/88) (plant specific).

NUREG/CR-1205, "Data Summaries of Licensee Event Reports of Pumps at U. S. Commercial Nuclear Power Plants" (industry-wide).

NUREG/CR-1363, "Data Summaries of Licensee Event Reports of Valves at U. S. Commercial Nuclear Power Plants" (industry-wide).

Unpublished data in process in connection with the VYNPS IPE program, contained in calculation files at NSD, YAEC (plant specific).

In addition, Vermont Yankee tracks specific BWR safety system performance for the quarterly INPO report. This data looks at the following information:

High Pressure Coolant Injection System unavailability hours.

Reactor Containment Isolation Cooling System unavailability hours.

RHR System and component unavailability hours.

Emergency diesel generator unavailability hours.

Unplanned safety system actuations.

Each system is tracked for planned, unplanned times of unavailability. This data is sent to INPO, which then compiles the data and compares VY's specific data to industry averages.

In addition, Vermont Yankee maintenance history records contain specific failure history information for specific Vermont Yankee components, but this is not "failure rate information" as defined above.

Interrogatory No. 27.

Interrogatory:

27. Please identify all purchase specifications for Vermont Yankee plant structures, systems and components.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to related only to proposed Contention 6 and proposed Contention 7, subpart "o," which were excluded by the Board.

Interrogatory No. 28.

Interrogatory:

28. Please describe in detail all procurement quality control requirements (or identify the documents where these requirements are found) for the structures, systems and components of the Vermont Yankee plant. This includes, but is not limited to, review and approval of vendor drawings and procedures, nondestructive examinations, performance tests and analyses. This request seeks information to determine the amount of pre-aging introduced by procurement tests and examinations, and the level at which

manufacturing flaws affecting aging could have been detected by nondestructive examinations.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to related only to proposed Contention 6 and proposed Contention 7, subpart "o," which were excluded by the Board.

Interrogatory No. 29.

Interrogatory:

29. Please identify the documents which demonstrate that the procurement quality control requirements were satisfactorily completed.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to related only to proposed Contention 6 and proposed Contention 7, subpart "o, " which were excluded by the Board.

Interrogatory No. 30.

Interrogatory:

30. Please describe in detail all construction quality control and quality assurance requirements (or identify documents where these requirements are found) for the structures, systems and components of the Vermont Yankee plant. This includes, but is not limited to, receipt inspections, weld examinations, preoperational tests and hydro tests. This request seeks information to determine the amount of pre-aging introduced by construction tests and examinations.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to relate only to proposed Contention 6 and proposed Contention 7, subpart "o," which were excluded by the Board.

Interrogatory No. 31.

Interrogatory:

31. Please identify the documents which demonstrate that the construction quality control and quality assurance requirements were satisfactorily completed.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to relate only to proposed Contention 6 and proposed Contention 7, subpart "o," which were excluded by the Board.

Interrogatory No. 32.

Interrogatory:

32. Please identify all inservice testing and inservice inspection requirements (or identify documents where these requirements are found) for the structures, systems and components of the Vermont Yankee plant.

Response:

The VYNPS Inservice Testing Program and Inservice Inspection Programs are written to satisfy the requirements of 10 C.F.R. § 50.55a(g) as published in the Code of Federal Regulations dated January 1, 1982. As such the testing and inspection of Safety Class 1, 2, and 3 components is effectively performed in accordance with ASME Section XI, 1980 Edition, through and including the winter 1980 addenda. These programs are reviewed and approved by the NRC. These programs are revised as defined by 10 C.F.R. or as mandated by changes in plant configuration.

Other tests and inspections are also performed as a result of internal and external commitments made by Vermont Yankee as a result of plant experience, industry experience, vendor recommendations, or regulatory changes. These additional tests and inspections are controlled and schedule by AP 4000 (Surveillance Testing Control) or AP 0028 (Operating Experience Review and Assessment/ Commitment Tracking).

Interrogatory No. 33.

Interrogatory:

33. Please identify the documents which demonstrate that the inservice testing and inservice inspection requirements were satisfactorily completed. Include the records of inspections completed under the ISI Program referred to in Section 3.2.2.1 of Attachment 2 of the application.

Response:

Documentation of inservice tests is required and provided by AP 0164 ("Operations Department Inservice Testing") and AP 0206 ("Inservice Testing Vibration Measurements"). Operational, capacity and performance testing and surveillances are provided and documented by individual system surveillance procedures.

Documentation of inservice inspections is provided on individual data sheets for each inspection. In addition, a NIS-1 report is submitted to NRC following each refueling outage describing the details and the results of each of our inspections. The documentation is provided in accordance with 10 C.F.R., Part 50 regulatory requirements and ASME Section XI requirements and retained by the Document Control Program. The NIS-1 is the "records of inspections" completed under the ISI Program referred to in Section 3.2.2.1 of Attachment 2 of the application. These records are available for inspection.

Interrogatory No. 34.

Interrogatory:

34. Please state the purchase date, manufacture date, receipt date and installation date for the structures, systems and components of the Vermont Yankee plant which are requested to be listed in interrogatory 20.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to relate only to proposed Contention 6 and proposed Contention 7, subpart "o," which were excluded by the Board.

Interrogatory No. 35.

Interrogatory:

35. Please describe in detail the process by which the storage requirements for each structure, system and component, before installation, are determined. Identify all documents establishing or describing these requirements.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to relate only to proposed Contention 6 and proposed Contention 7, subpart "o," which were excluded by the Board.

Interrogatory No. 36.

Interrogatory:

36. Please identify the procedures which established storage methods during the construction period. In this identification, provide the dates of each revision to each of these procedures.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to relate only to proposed Contention 6 and proposed Contention 7, subpart "o," which were excluded by the Board.

Interrogatory No. 37.

Interrogatory:

37. Please identify the procedures which have established storage methods for structures, systems and components since initial operation. In this identification, provide the revision history of the storage procedures.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to relate only to proposed Contention 6, which was excluded by the Board.

Response:

Without waiving the foregoing objection but rather expressly relying upon the same:

Procedures used for storage of structures, systems and components are identified as follows:

AP 0801	"Receiving and Shipment of Material and Equipment" - Rev. 18
AP 0803	"Storage of Materials and Equipment" - Rev. 11
YOQAP 1A	Identifies the standards which we are committed to in this area

Preparation of a revision history involves reviewing each of the prior revisions, which will be made available upon request.

Interrogatory No. 38.

Interrogatory:

38. Please identify all documents which verify the manner in which structures, systems and components are stored prior to installation at the Vermont Yankee plant.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to be related only to proposed Contention 6 and proposed Contention 7, subpart "o," which were excluded by the Board.

Response:

Without waiving the foregoing objection, but rather expressly relying upon the same, Vermont Yankee supplies the following information:

Procurement and Material Control Audits

VY 89-8 (12/14/89)
VY 88-8 (9/28/88)
VY 87-8 (12/23/87)
VY 86-8 (12/22/86)
VY 85-8 (8/22/85).

Note that the storage methods are one of the attributes normally selected during the above audits.

Interrogatory No. 39.

Interrogatory:

39. Please state the dates of all quality assurance audits of the storage methods during the construction period of the Vermont Yankee plant.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to be related only to proposed Contention 6 and proposed Contention 7, subpart "o," which were excluded by the Board.

Interrogatory No. 40.

Interrogatory:

40. Please identify all documentation of the audits listed in response to the previous interrogatory, including audit reports, reports to management, audit check lists, informal check lists, and handwritten notes.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to be related only to (proposed Contention 6 and proposed Contention 7, subpart "o," which were excluded by the Board.

Interrogatory No. 41.

Interrogatory:

41. Please identify all documents available concerning the environmental conditions which structures, systems, components of the Vermont Yankee plant experienced during the period between the construction period date and the operating license date. This should include all documents remaining available on environmental conditions for storage locations and for as-installed in-plant conditions before operation.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to be related only to proposed Contention 6 and proposed Contention 7, subpart "o," which were excluded by the Board.

Interrogatory No. 42.

Interrogatory:

42. Regarding the activity of "reconstituting the design basis," as described by Mr. Donald Reid of Vermont Yankee at the meeting with NRC Region I in King of Prussia, PA, on January 26, 1989, please answer the following:

    a. Describe what is meant by "reconstituting the design basis."

    b. Why is it necessary to reconstitute the design basis?

    c. Identify the personnel performing the work involved in reconstituting the design basis.

d. Describe in detail the schedule for the design basis reconstitution activity; include the dates when the program began and when it is scheduled to be completed.

e. Has the completion date been adjusted since the beginning of the project? If so, how?

f. Identify the procedure by which this work is being accomplished.

g. Provide the percentage of work (or percentage of design bases) for which reconstitution has not been completed.

h. State all design bases which have not been "reconstituted."

Response:

a. "Reconstituting the Design Basis" means providing and maintaining a central cross-referencing data system that references applicable calculations, specifications, design changes, licensing basis, licensing commitments, and licensing correspondence.

b. It isn't necessary. However, the centralized system facilitates reference to the current design basis and supporting information for all applications where such reference is required or important, and this facilitation (i) reduces engineering effort and (ii) further reduces the potential for overlooked information. This system helps to assure that when facility changes are made (or other circumstances arise that require an understanding of the original designers' intentions), applicable reference information is quickly and comprehensively available for resulting recommendations and for consideration in the final evaluation.

c.

R. Swenson	YNSD	Systems Engineer;
D. Yasi	YNSD	Lead Systems Engineer;
R. Oliver	YNSD	Lead Mechanical Engineer;
P. Johnson	YNSD	Lead Electrical Engineer;
D. January	YNSD	Lead I&C Engineer;
J. Hoffman	YNSD	Engineering Manager;
S. Miller	YNSD	Project Manager;
K. Gavin	YNSD Contractor	Computer Data Entry, Module Preparation;
M. Lenon	YNSD Contractor	Computer Data Entry, Module Preparation;
J. Kendrick	YNSD	Computer Program Development;
A. Kendrick	YNSD	Computer Program Development;
S. Misiaszek	YNSD	Computer Program Development;

M. Metell	VYNPS	Principal Engineer; and
D. Reid	VYNPS	Operations Support Manager.

d. Design Basis Reconstitution efforts began in 1987 and are an ongoing effort that will not end until the plant is decommissioned. If the question is whether the Design Basis Manual is currently complete, the answer is that it is.

e. See above.

f. The procedure is contained in the Vermont Yankee Engineering Design Basis Manual under sub-section "Administration of the Vermont Yankee Design Basis Catalog" and Annex A "Procedure for Design Basis Catalog Development."

g. See above.

h. See above.

Interrogatory No. 43.

Interrogatory:

43. Please describe in detail the external events and natural phenomena for which the Vermont Yankee plant is designed, for each of the design conditions and design basis events.

Response:

See FSAR chapters 2 and 12.

Interrogatory No. 44.

Interrogatory:

44. Please identify all documents related to any safety system functional inspections (SSFIs) performed for the Vermont Yankee plant. This request includes, but is not limited to, all internal correspondence and correspondence with Westec Incorporated, or other contractors all Westec Incorporated inspection results, records, data sheets, findings, Westec internal memoranda; all documentation related to resolution of inspection findings; and the SSFI reports.

Response:

NRC Inspection and Enforcement Manual, Chapter 2515, Appendix C.

NSAC-121, Guidelines for Performing Safety System Functional Inspections, 11/88.

Letter, Westec to VYNPC (88-017), 2/4/88.

Vermont Yankee Nuclear Power Plant Safety System Functional Inspection, prepared by ERC International/Westec Power Engineering Division, 11/18/88.

Memo, LAT to JPP/SRM (VYB 88/561), 11/23/88.

Memo, LAT to SRM (VYB 88/572), 11/28/88.

VYNPS SSFI Commitment Tracking List (per AP 0028), and item close-out documentation identified therein.

Interrogatory No. 45.

Interrogatory:

45. Please identify all INPO reports describing reliability information of Vermont Yankee plant specific equipment, including all documents identifying the Vermont Yankee Uninterruptible Power Supply (UPS) as a reliability outlier.

Response:

Component Failure Analysis Reports (CFARs) are available through the INPO Nuclear Plant Reliability Data System (NPRDS). These reports provide comparisons of the performance standard component types at Vermont Yankee to similar components industry wide. Vermont Yankee is not aware of any INPO reports that identify the UPS as a reliability outlier.

Interrogatory No. 46.

Interrogatory:

46. State which of the reports identified in response to the previous interrogatory identify the UPS as a reliability outlier.

Response:

Vermont Yankee is not aware of any INPO reports that identify the UPS as a reliability outlier.

Interrogatory No. 47.

Interrogatory:

47. Please identify all procedures applicable to requalifying components to a longer installed life, as stated in Sections 3.2.2.2 and 3.4.3 of Attachment 2 of the application.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that the subject references are limited to the Environmental Qualification program under 10 C.F.R. § 50.49 and the interrogatory appears to be related only to proposed Contention 6, and in particular to sub-part "t" thereof, which was excluded by the Board.

Interrogatory No. 48.

Interrogatory:

48. Please describe in detail all methods by which components are requalified to longer lives, and explain why these methods are valid.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that the subject references are limited to the Environmental Qualification program under 10 C.F.R. § 50.49 and the interrogatory appears to be related only to proposed Contention 6, and in particular to sub-part "t" thereof, which was excluded by the Board.

Interrogatory No. 49.

Interrogatory:

49. Please list the following, in the format of the listing provided in interrogatory 20 (or alteratively, the formats of the lists from interrogatories 21 and 22, plus any additional structures, systems and components not appearing on these lists), for of each structure, system and component in the Vermont Yankee plant: Each vendor recommendation for maintenance and each vendor recommendation which contributes to maintaining the design life or

qualified life of the structure, system or component. This listing should include, but not be limited to, preventive maintenance actions, preventive maintenance frequencies, allowable or assumed environmental conditions, repetitive actuations and lubrication type.

Response:

The information requested is not contained in any single file location on site. It is, however, available for the most part in our maintenance department files (vendor manuals, PM work order forms, and summary of PM done/machine repair cares, as identified in AP 0206 ("Maintenance Program"), EQ files and/or experience assessment files).

Interrogatory No. 50.

Interrogatory:

50. If for any reason, you decline to provide the listing of vendor recommendations requested in the foregoing interrogatory, identify with specificity the location of each vendor recommendation for each structure, system and component. This identification must state what portion of a document, by page number or section number, contains the referenced vendor recommendation.

Response:

The information requested is not contained in any single file location on site. It is, however, available for the most part in our maintenance department files (vendor manuals, PM work order forms, and summary of PM done/machine repair cards, as identified in AP 0200 ("Maintenance Program"), EQ files and/or experience assessment files).

Interrogatory No. 51.

Interrogatory:

51. For each vendor recommendation listed or identified in response to the previous two interrogatories, indicate whether:

    a. The recommendation has been followed precisely, or

    b. The recommendation has generally been followed, or

    c. The recommendation has not been followed.

Response:

Vermont Yankee possesses no comprehensive compilation of vendor recommendations categorized as requested. Vermont Yankee generally follows vendor recommendations unless an evaluation is performed or judgment made that there is a prefereable alternative. In general, our review considers the recommendation's applicability, the historical performance of the equipment/component and the significance of the equipment involved. Many evaluations were made based on the judgment of experienced individuals and as such are not formally documented. The current method of evaluation is provided in procedure AP 0028 ("Operating Experience Review and Assessment/Commitment Tracking") and AP 0312 ("Equipment Technical Information"). Documents relating to any given disposition are referenced in the Commitment Tracking system implemented per AP 0028.

a. See above.

b. See above.

c. See above.

Interrogatory No. 52.

Interrogatory:

52. For each vendor recommendation listed or identified in response to interrogatories 49 and 50 which you have either generally followed or not followed (if any), provide:

    a. An explanation of why the vendor recommendation has been generally followed or not followed.

    b. A description of the evaluation or justification performed (if any) which demonstrates the acceptability of not precisely following the vendor recommendations.

    c. An identification of all documents which are part of the evaluation or justification for not precisely following vendor recommendations.

Response:

Procedures AP 0028 ("Operating Experience Review and Assessment/Commitment Tracking"), AP 020 ("Maintenance Program"), AP 0310 ("Surveillance, Preventative and Corrective Maintenanc Program"), and AP 0312 ("Equipment Technical Information") provide guidance in the processing of vendor recommendations.

a. See 51.a.

b. See 51.b.

c. See 51.c.

Interrogatory No. 53.

Interrogatory:

53. If a vendor recommendation for structures, systems and components is not precisely followed, do you always receive vendor concurrence for this action?

    a. If your answer is yes, identify every vendor concurrence for each vendor recommendation which has not been precisely followed.

    b. If your answer is no, provide every reason why vendor concurrence is not necessary when vendor recommendations are not followed.

Response:

In cases where vendor recommendations are not followed, vendor concurrence is not generally requested.

a. Not applicable.

b. VYNPS has the qualifications and expertise within its staff to make these types of assessments. In addition, VYNPS staff is more familiar with the performance of plant equipment and the environmental conditions, equipment history, and other specific criteria applicable to the judgments in question.

Interrogatory No. 54.

Interrogatory:

54. Identify any and all documents providing direction or instructions regarding following vendor recommendations for maintenance of structures, systems and components.

Response:

Procedures AP 0028 ("Operating Experience Review and Assessment/ Commitment Tracking"), AP 0200 ("Maintenance Program"), AP 0310 ("Surveillance, Preventative and Corrective Maintenance Program") and AP 0312 ("Vendor Technical Information") provide guidance in the processing of vendor recommendations.

Interrogatory No. 55.

Interrogatory:

55. Please identify all procedures guiding personnel in the determination of failure and root cause analysis.

Response:

AP 0021 "Maintenance Requests"

AP 0200 "Maintenance Program"

AP 0010 "Occurrence Reports/Notifications and Reports Due" (specifically Sections II (LER's) and III (PIR's)).

AP 0310 "Surveillance Preventative and Corrective Maintenance Program"

VYNPC Users Guide for Root Cause Analysis.

Interrogatory No. 56.

Interrogatory:

56. Please describe in detail the method by which failure and root cause evaluations are performed and documented for the following cases:

    a. Failures which result in LERs.

    b. Failures for which a PRO is generated, but which do not result in LERs.

    c. Failures of structures, systems and components which do not result in generation of a PRO.

    d. Failures of nonsafety-related structures, systems or components whose failure can cause or adversely affect a transient

or accident that significantly challenges structures, systems and components relied upon for the integrity of the reactor coolant pressure boundary, safe shutdown, or accident mitigation.

Response:

a. Per AP 0021 and AP 0010 directions and with the additional guidance contained in either AP 0200 or AP 0310 and with methods contained in VYNPC Users Guide for Root Cause Analysis.

b. Per AP 0021 and AP 0010 directions and with the additional guidance contained in either AP 0200 or AP 0310 and with methods contained in VYNPC Users Guide for Root Cause Analysis.

c. Per AP 0021 directions and with the additional guidance contained in either AP 0200 or AP 0310 and with methods contained in VYNPC Users Guide for Root Cause Analysis.

d. Per AP 0021 directions and with the additional guidance contained in either AP 0200 or AP 0310 and with methods contained in VYNPC Users Guide for Root Cause Analysis.

Interrogatory No. 57.

Interrogatory:

57. Identify all documentation of the root cause evaluations, including but not limited to documentation of methodology, discussed in the foregoing interrogatory.

Response:

Root cause evaluations have been performed as part of the determination of cause of failure on LER's, PIR's, and NCR's for a number of years. The conclusion of the evaluation is documented in the respective document. However, until recently there was no requirement to document the root cause evaluation itself, and no supporting documentation is available.

The Repair Department conducts probable cause analyses and root cause analyses using the methodology contained in AP 0200 ("Maintenance Program"). The steps contained in these procedures are essentially as follows:

1. The Equipment Failure/Probable Cause Record (VYAPF 0200.03) provides a "cook book" method for probable cause determination. The Record is attached to all MRs, is completed by the worker(s) and reviewed by the assistant foreman.

2. If further cause analysis is required, as determined by the assistant foreman on VYAPF 0200.03, an Equipment Failure/Probable Cause Engineering review is initiated by the senior maintenance engineer.

3. Root cause determinations are made in the following manners:

   - direct review and disposition by the maintenance engineering staff

   - extensive root cause analysis using the VYNPC Users Guide for Root Cause Analysis. This analysis is performed by various departments and at times by specific groups designated to review a specific incident.

The result of a root cause analysis may be documented in the MR, or one of the types of documents identified above.

See also AP 0310 ("Surveillance Preventative and Corrective Maintenance Program") and AP 0021 ("Maintenance Request"), Rev. 17 (due to be issued 6/1/90).

Interrogatory No. 58.

Interrogatory:

58. Please identify each and every training module, course or segment, used by Vermont Yankee, which trains personnel to perform failure and root cause evaluations.

Response:

Root cause training is provided using Technical Staff and Manager Training Program Instructor Guide RCA-001, Rev. 1.

Failure cause training is provided to each responsible individual through the following department training instructor guides:

Technical Staff and Manager Training Program XTS-90-001.

I&C Initial Training CIC-04-002 ("Maintenance Requests"), CIC-04-017 ("Troubleshooting").

Maintenance Training Program CMM-01-005 ("Administrative Guidance").

Additionally, personnel receive quality assurance training in accordance with AP 6700 ("Quality Assurance Training").

Interrogatory No. 59.

Interrogatory:

59. Please identify each and every instruction, policy guidance, or memorandum which has been operative since January 1, 1988, which provides guidance or instructions to personnel performing root cause evaluations.

Response:

The following documents have been used by personnel performing root cause analysis since January 1, 1988.

1. NRC NUREG-1022 Licensee Event Report System
2. Operations Department Users Guide for Root Cause Analysis
3. Corrective Action Task Force Report
4. Memo: J.P. Pelletier to Superintendent/Dept. Heads, dated 3/13/90, Subject: Corrective Action Task Force Report Disposition
5. Vermont Yankee NPC Users Guide for Root Cause Analysis (Rev. 1)
6. Memo R.J. Wanczyk to Distribution (file 2.3) 3/11/86.
7. Memo J.P. Pelletier to Department Heads (file 1.0) 11/7/86.
8. Memo W.P. Murphy to Distribution (file VYB 88/250) 5/2/88.
9. Memo J.P. Pelletier to Distribution (file 1.0) 8/23/89.

Interrogatory No. 60.

Interrogatory:

60. Do you agree with the statement from IR 89-80, at page 15, which states, "However, the inspectors noted that no formal training program has been established in the methodology for performing root cause analysis"?

a. If your response is anything other than an unqualified affirmative, state each and every reason for your disagreement.

b. If your response is affirmative, explain how your personnel perform root cause evaluations without formal training.

Response:

VYNPS agrees that there was, at the time in question, no formal training module at VYNPS denominated "root cause analysis methodology" or the like. VYNPS did not at the time, and does not today, understand the quoted statement to imply that the VYNPS personnel engaged in root cause analysis lack the requisite education, training and experience for the task. If the statement had been to such effect, then VYNPS would not agree with it.

Personnel performing root causes analyses for VYNPS are personnel either (i) are degreed engineers, or (ii) have strong technical backgrounds and are supervised by degreed engineers. Because of their educational backgrounds, professional engagements and natural aptitudes, engineers are people who typically want to know what equipment works or doesn't work. This aptitude is also the key ingredient in performing a root cause analysis and is the main reason why "informal" training has worked well at VYNPS for the last 18 years. Although the referenced Inspection Report refers specifically to ESD and NSD, it should be emphasized that other departments, such as Operations, Maintenance, I&C, Reactor Engineering, Chemistry, Radiation Protection, Construction and Management are all populated with degreed engineers and persons with strong technical backgrounds.

VYNPS has always recognized the important of root cause analysis and has successfully over the past 18 years conducted root cause analysis by including aspects of root cause analysis in training, by using degreed engineers who have been educated in root cause analysis, and by informal training conducted on the job. VY has focussed on correct root cause in Licensee Event Reports (LERs). In addition, VYNPS periodically sends several engineers to offsite training on root cause analysis, who then brief other VY personnel, during weekly department meetings, on what they have learned and what study materials they had acquired for department use.

a. See above.

b. See above.

Interrogatory No. 61.

Interrogatory:

61. Please identify all procedures guiding personnel in the determination of the safety consequences and implications of the failure, inoperability or degradation of structures, systems and components, or of procedural inadequacies.

Response:

The following procedures are used in the determination of safety consequences and implications of failure, inoperability or degradation of structures, systems, and components, or of procedural inadequacies.

AP 0010	Occurrence Reports/Notification and Reports Due
AP 0014	Safety Class Determination Instructions
AP 0020	Control of Temporary Modifications
AP 0042	Plant Fire Protection
AP 0125	Plant Equipment Control
AP 0154	Post Trip Review
AP 6002	Preparing 50.59 Evaluations
AP 6021	Nonconformance Reports

Interrogatory No. 62.

Interrogatory:

62. Please describe in detail the method by which the safety consequence and implications of failure, inoperability or degradation of structures, systems and components are performed and documented for the following cases (include identification of each document named):

    a. Failures which result in LERs.

    b. Failures for which a PRO is generated, but which do not result in LERs.

    c. Failures of structures, systems and components which do not result in generation of a PRO.

    d. Failures of nonsafety-related structures, systems or components whose failure can cause or adversely affect a transient or accident that significantly challenges structures, systems and components relied upon for the integrity of the reactor coolant pressure boundary, safe shutdown, or accident mitigation.

Response:

a. Failures which result in LER's are evaluated:

1) by the Operating Crew at the time of occurrence based upon:

Technical Specifications
AP 0125 Plant Equipment Control
AP 0010 Occurrence Reports/Notification and Reports Due

2) by Engineering Support Department during review of the PRO to determine reportability and during preparation of the LER based upon:

Technical Specifications
VY Final Safety Analysis Report
10 C.F.R. 50
NUREG-1022 Licensee Event Report System

3) by the Repair Department and again by the Operating Crew during the repair effort based upon:

AP 0014 Safety Class Determination Instructions
AP 0021 Maintenance Request
Technical Specifications
AP 0125 Plant Equipment Control

4) by the Technical Services Superintendent and Plant Manager during review of PRO to determine reportability and review of the LER based upon:

Technical Specifications
VY Final Safety Analysis Report
10 C.F.R. 50
NUREG-1022 Licensee Event Report System

5) by the Plant Operations Review Committee during review of the LER based upon:

Technical Specifications requirements
AP 0030 Plant Operations Review Committee
AP 0154 Post Trip Review (if plant trip was involved)

b. Failures for which a PRO is generated, but do not result in LER's are evaluated:

1) by the Operating Crew at the time of occurrence based upon:

Technical Specifications
AP 0125 Plant Equipment Control
AP 0010 Occurrence Reports/Notification and Reports Due

2) by Engineering Support Department during review of the PRO to determine reportability based upon:

Technical Specifications
VY Final Safety Analysis Report
10 C.F.R. 50
NUREG-1022 Licensee Event Report System

3) by the Repair Department and again by the Operating Crew during the repair effort based upon:

AP 0014 Safety Class Determination Instructions
AP 0021 Maintenance Request
Technical Specifications
AP 0125 Plant Equipment Control

4) by the Technical Services Superintendent and Plant Manager during review of the PRO to determine reportability based upon:

Technical Specifications
VY Safety Analysis Report
10 C.F.R. 50

c. Failures for which no PRO is generated are evaluated:

1) by the Operating Crew at the time of occurrence based upon:

Technical Specifications
AP 0125 Plant Equipment Control
AP 0010 Occurrence Reports/Notification and Reports Due

2) by the Repair Department and again by the Operating Crew during the repair effort based upon:

AP 0014 Safety Class Determination Instructions

AP 0021 Maintenance Request
Technical Specifications
AP 0125 Plant Equipment Control

d. Failures of non-safety related structures systems or components whose failure can adversely affect a transient or accident that significantly challenges structures, systems and components relied upon for the integrity of the reactor coolant pressure boundary, safe shutdown, or accident mitigation are evaluated:

1) by the Operating Crew at the time of occurrence based upon:

Technical Specifications
AP 0125 Plant Equipment Control
AP 0010 Occurrence Reports/Notification and Reports Due

2) by the Repair Department and again by the Operating Crew during the repair effort based upon:

AP 0014 Safety Class Determination Instructions
AP 0021 Maintenance Request
Technical Specifications
AP 0125 Plant Equipment Control

Interrogatory No. 63.

Interrogatory:

63. Please describe in detail each and every training module, course or segment which trains personnel to perform the evaluation of safety consequence and implications of failures, inoperabilities and degradations of structures, systems and components.

Response:

On account of the breadth of the subjects referred to, this interrogatory cannot be answered by segregating out discrete portions of the aggregate training effort. The reason for this is as follows:

The evaluation of potential safety consequences and other possible implications of failures, inoperabilities and degradations of structures, systems and components is the responsibility of many different people at different times. For example, the operating shift is responsible at the time of the failure for evaluating the consequences and responding in accordance with VY approved procedures. The operating shift would discharge its responsibility using,

among other things, the Tech Specs, the Operating Procedures, system knowledge, simulator training experience, and the entirety of their experience, both in training and on the job. Similarly, each repair department, the Engineering Support Department, and plant management is also responsible for this evaulation in certain circumstances. The circumstances are described in the response to Interrogatory No. 62.

For these reaons, virtually every aspect of the training program might be included in the set called for.

Interrogatory No. 64.

Interrogatory:

64. Please identify each and every instruction, policy guidance, memorandum, and other document which has been operative since January 1, 1988, which provides guidance or instructions to personnel performing the evaluation of safety consequence and implications of failures, inoperabilities and degradations of structures, systems and components.

Response:

Procedures and instruction that provide the guidance for these evaluations are provided in the response to Interrogatory Nos. 61 and 63. Other plant documents which form the basis for those procedures are included as references in those procedures.

Interrogatory No. 65.

Interrogatory:

65. Please describe in detail each occurrence in which Vermont Yankee plant equipment has been modified because it has become obsolete, as referred to in Section 3.3.2 of Attachment 2 of the application.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to be related only to proposed Contention 6, which was excluded by the Board.

Response:

Without waiving the foregoing objection, but rather expressly relying upon the same, Vermont Yankee provides the following information:

Failures of components at Vermont Yankee are not generally classified in this manner and VY is not aware of any modifications that can be separately and strictly attributed to obsolescence.

Rather, as is indicated in section 3.3.2 of the referenced document, obsolescence is one of the many factors that may result in a component (or the system of which it is a part) being determined by VY management to warrant replacement or modification. Other such factors include performance, availability, repairability, efficiency, changing standards affecting requirements and changes in the availability of product and capability. By itself, obsolescence does not tend to indicate non-function, but rather difficulty (or expense) of maintenance, replacement or repair greater than that that might be experience were other equipment employed. Thus, something may be modified or replaced because it doesn't work (because of "obsolescence" or some other cause) or because there are new or different ways to accomplish a function better.

Generally, "components" are not "modified." The practice is to replace the component with the new component that is identical in fit, form and function, or to modify the system to install new state of the art equipment that will perform the same function with improved equipment reliability, enhanced efficiency, reduced cost, enhanced function, or some combination of these factors.

Some examples where obsolescence was a major factor considered during the modification are: process computer replacement, RPS Analog Trip System modifications, Uninterruptable Power Supply replacement. For other examples that exist, as is the case of modification, a "Job Order File" is created to contain the documentation relative to the replacement. These Job Order Files are available for inspection.

Interrogatory No. 66.

Interrogatory:

66. For each occurrence identified in the preceding interrogatory, describe in detail how the determination of obsolescence was made.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to be related only to proposed Contention 6, which was excluded by the Board.

Response:

Without waiving the foregoing objection, but rather expressly relying upon the same, Vermont Yankee provides the following information:

Determination of obsolescence is based upon manufacturer's information and availability of replacement parts or components. However, as described in the response to the foregoing interrogatory, a number of other factors have the potential for affecting a decision to replace a component, such as: the efficiency with which a component performs its tasks and can be maintained, the availability of replacements that provide enhanced function, reduced costs or are just considered "better," the extent to which wide use by others of a component may be likely to insure availability of the component and parts therefor at competitive prices, and the like. Such factors might well (and often do) lead to the replacement of a component that has not yet become "obsolete."

Interrogatory No. 67.

Interrogatory:

67. Please provide the date and the structure, system and component that was modified for each occurrence in which a structure, system or component has been modified because it had reach its end-of-useful life, as referred to in Section 3.3.2 of Attachment 2 of the application.

Response:

Section 3.3.2 does not refer to the modification of equipment on account of the equipment reaching end of useful life. Rather, that section refers to "changes" "to replace equipment which has failed, become obsolete or reached its end-of-useful life." Notwithstanding the foregoing, Vermont Yankee offers the following information:

There have been no instances where a structure or a system was replace due to reach its end-of-useful-life. Vermont Yankee has labelled component failures and replaced components for what we considered end-of-useful-life (or at least approaching end-of-useful-life). Vermont Yankee labels failures as end-of-useful-life if it less expensive to replace the component than to repair it. If repair costs were not a consideration, it is likely that very few, if any, component failures fall into this category. Some examples of components that we have replaced due to what we considered end-of-useful life are:

Piping replacements to address erosion/corrosion or IGSCC:

Recirculation piping replacement
Bottom head drain piping replacement
Service water piping replacement

Equipment replacements:

Reactor water clean up heat exchanger
RCIC 21 valve motor replacement

As discussed in question 65, in each case a "Job Order File" is created to contain the documentation relative to the modification, repair, or replacement.

Job Order Files are retained in the plant document control system and are available for review.

Interrogatory No. 68.

Interrogatory:

68. For each occurrence identified in the preceding interrogatory, describe in detail how the determination of end-of-useful life was made.

Response:

Determination of end-of-useful-life is based upon careful consideration and evaluation of the following inputs, as appropriate:

1) Economics: cost of repair versus cost of replacement.

2) Engineering judgment.

3) Maintenance history.

4) Preventative maintenance.

5) Inservice inspections/testing.

6) Equipment failures.

7) Industry experience.

8) Management directives.

Interrogatory No. 69.

Interrogatory:

69. Please describe in detail or identify the trend analyses for safety-related electrical equipment not covered by the Equipment Qualification Program, referred to in Section 3.4.3 of Attachment 2 of the application.

Response:

Regular trending of electrical equipment in addition to that done as part of the EQ program.

1) Batteries

   Weekly and quarterly specific gravities per OP 4210 gives present state of charge

2) Station Transformers

   Gas in oil analysis, AP 0200
   Metals in oil analysis, AP 0200

3) Motor Insulation Trends, OP 5235

4) Failure Trending Program - presently covered components per AP 0200

   a) Valves - MOVs and manuals
   b) Pumps and fans
   c) Motors - lubrication, bearings, electrical failures, vibration
   d) Power panels - MCCs and switchgear
   e) Breakers - low, medium and high voltage
   f) Heaters

5) Diesel generator, OP 5225 and OP 4126

   a) Megger
   b) Doble
   c) Hi pot
   d) Start/voltage times

6) Station Protective Relaying, OP 4208, 4214, 4245, 4259

Interrogatory No. 70.

Interrogatory:

70. Please describe in detail or identify the strict construction procedures referred to in Section 3.4.4.1 of Attachment 2 of the application.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to be related only to proposed Contention 6 and proposed Contention 8, which were excluded by the Board.

Interrogatory No. 71.

Interrogatory:

71. Please describe in detail or identify the good maintenance practices for corrosion prevention, concrete surface repair and protective coating upkeep, referred to in Sections 3.4.4.1 and 3.5 of Attachment 2 of the application.

Response:

SOV misreads sections 3.4.4.1 and 3.5 of Attachment 2. The actual statement is:

> "Using good maintenance practices *such as* corrosion prevention, concrete surface repair and protective coating upkeep, the Vermont Yankee structural integrity can be assured well beyond a full 40-year licensing period."

The good maintenance practices identified in this section are corrosion prevention, concrete surface repair and protective coating upkeep. The accomplishment of these tasks is controlled by AP 0021 ("Maintenance Request") and completed maintenance requests provide the specifics (trends, acceptance criteria, etc.) of any of these accomplished activities.

Interrogatory No. 72.

Interrogatory:

72. Please identify by date all surveillances of containment performed under OP 4115, and all surveillances performed or documented under earlier procedures or methods.

Response:

Because of the amount of time required researching this historical data, the search was limited to the time period from November, 1986, to the present. In the event that SOV wishes to conduct research for earlier periods, the necessary documentation will be made available for inspection.

Throughout the stated period:

	Title	Frequency Performed
1.	Quarterly Power Operated Isolation Valves Operability Test	Quarterly
2.	Drywell/Torus Vacuum Breakers Operability Test	Monthly
3.	Drywell/Torus Vacuum Breakers Opening Force Test	Refueling Outage
4.	Visual Inspection of Primary Containment	Refueling Outage
5.	Drywell Temperature Profile	As Required
6.	Drywell/Torus Vacuum Breaker Leakage Test	Refueling Outage
7.	Refueling Outage Valve Operability Test	Refueling Outage

Interrogatory No. 73.

Interrogatory:

73. Please identify all documentation which exists for each of the surveillances identified in response to the foregoing interrogatory.

Response:

OP 4115 and all associated surveillance forms are available for inspection.

Interrogatory No. 74.

Interrogatory:

74. Please identify the coating specialist identified on page 4 of Enclosure A of BVY 89-69.

Response:

As set forth on page 4 of Enclosure A of BVY 89-69, the coating specialist is Mr. Richard Martin from Stone & Webster Engineering Corp.

Interrogatory No. 75.

Interrogatory:

75. Please describe in detail the technical qualifications (education, employment history, licenses and certificates, experience, or other information which the licensee believes establishes the qualifications of the person) of the coating specialist identified on page 4 of Enclosure A of BVY 89-69.

Response:

Mr. Martin is employed by Stone & Webster Engineering Corp. ("SWEC") and is a Senior Engineer and a Protective Coating Specialist in the Mechanical Division of SWEC. Mr. Martin holds a Bachelor of Science degree in Mechanical Engineering Technology. As a Protective Coating Specialist, Mr. Martin is responsible for specifying coating and lining materials, establishing and specifying surface preparation and material application requirements, providing technical direction and assistance to coating and lining application efforts, and resolving coating-related problems. Mr. Martin has 21 years of experience, 10 of which have been with SWEC. Prior to his employment with SWEC, Mr. Martin was a Machinists's Mate in the United States Navy, responsible for the operation and maintenance of nuclear propulsion plants.

Interrogatory No. 76.

Interrogatory:

76. Please identify the "YNSD and Vermont Yankee engineers" who inspected the results of the manual scraping effort, referenced on page 5 of Enclosure A of BVY 89-69.

Response:

The YNSD engineers who inspected the results of the manual scraping effort were Leonard A. Tremblay, Jr., Christopher H. Hansen, and Daniel E. Yasi. The VYNPS engineer who inspected the same results was William D. Fields.

Interrogatory No. 77.

Interrogatory:

77. Please describe in detail the technical qualifications (education, employment history, licenses and certificates, experience, or other information which the licensee believes establishes the qualifications of the person) of the "YNSD and Vermont Yankee engineers" who inspected the results of the manual scraping effort, referenced on page 5 of Enclosure A of BVY 89-69.

Response:

Mr. Tremblay is employed by Yankee Atomic Electric Company ("YAEC") and is the Senior Licensing Engineer on the Vermont Yankee Project management staff. He holds a Master of Science degree in Applied Management and a Bachelor of Engineering Technology degree in Mechanical Engineering. Mr. Tremblay has 14 years of engineering experience, 8 of which have been on the Vermont Yankee Project. In his present capacity, Mr. Tremblay serves as the primary interface for Vermont Yankee Nuclear Power Corporation with the Nuclear Regulatory Commission Office of Nuclear Reactor Regulation ("NRR"). In his previous assignment as a Senior Engineer in the Systems Group of the Vermont Yankee Project, Mr. Tremblay was responsible for all aspects of plant fluid system design and engineering analyses. Prior to joining YAEC, Mr. Tremblay held a variety of engineering positions in the process, petrochemical and nuclear industries in the areas of pump and valve design, piping design and layout, pipe support design, stress analysis, and test engineering at an Emergency Core Cooling System test facility. Mr. Tremblay is a member of the American Society of Mechanical Engineers ("ASME") and is currently a member of an ASME working group to prepare national standards for performance testing of Emergency Core Cooling Systems in Boiling Water Reactors.

Mr. Hansen is employed by YAEC and is a Senior Engineer assigned to the Systems Group of the Vermont Yankee Project. Mr. Hansen has 16 years of experience in nuclear electric power generation stations and 6 years experience as a United States Navy Nuclear Propulsion Plant operator. Prior to joining YAEC, Mr. Hansen was employed by Stone & Webster Engineering Corp., where he was responsible for initial plant design of various nuclear

systems and equipment for the Beaver Valley Nuclear Power Station, Unit 2, including the reactor containment liner and coating system. During plant construction, Mr. Hansen was assigned to the Beaver Valley Nuclear Station, Unit 2, Site Engineering Office, where his primary responsibility was the installation of the nuclear steam supply system equipment and its interface with the balance of plant systems.

Mr. Yasi is employed by YAEC and is the Lead Systems Engineer for the Vermont Yankee Project. His responsibility include directing a staff of engineers who design plant process system modifications, perform engineering studies, and provide other engineering support services. He holds a Masters of Science degree in Applied Management and a Bachelor of Science degree in Mechanical Engineering. Mr. Yasi has 15 years experience in the nuclear power industry, including 8 years at YAEC.

Mr. Fields is presently employed by YAEC as an Engineer in the Plant Services Department. He has over 12 years of engineering experience and holds an A.E. degree in Mechanical Engineering. In his previous position as a Mechanical Construction Project Engineer at the Vermont Yankee plant site, Mr. Fields was responsible for the implementation of a variety of design projects and supervision of contractor personnel. Mr. Fields was the plant engineer responsible for 1989 drywell and torus coating maintenance activities.

Interrogatory No. 78.

Interrogatory:

78. Please describe in detail the results of the inspections of paint scraping activities for drywell and torus, referenced on page 5 of Enclosure A of BVY 89-69.

Response:

As summarized in BVY 89-69, initial inspections of the drywell and torus coatings were made by YNSD and VY engineers, accompanied by a coatings specialist from SWEC, on March 17 and March 21, 1989. The conclusions drawn by the SWEC coating specialist from this detailed walkdown of the drywell and torus were as follows:

1. Peeling of the topcoat material in the torus had occurred mostly at the top of the torus and on the top of the vent header where pedestrian traffic may have contributed to the failure.

2. The amount of topcoat failing in the torus from one outage to the next appeared to be small (as evidenced by the varying degrees of oxidation of the exposed inorganic zinc primer). Scraping to remove the loose material each outage has prevented the majority of the peeling coating from falling into the torus water volume during the operating cycle.

3. The exposed inorganic zinc primer in the torus was in good condition and continues to provide corrosion protection to the steel substrate.

4. Failure of the topcoat in the drywell had occurred almost entirely within the vertical section above the upper containment spray ring header, which corresponds to the higher temperature regions of the drywell.

5. Approximately 40% of the inorganic zinc primer was exposed in the upper section of the drywell before the loose topcoat was scraped from the surface.

6. A large percentage of the topcoat remaining on the wall of the upper section of the drywell was loose and could be removed easily.

7. The exposed inorganic zinc in the drywell was in good condition, retained a film thickness nominally equal to the originally applied thickness, and continued to provide corrosion protection to the steel substrate.

8. Failure of the exposed inorganic zinc primer will not produce chips that could potentially cause blockage of safety system suction strainers.

The recommendations made by the coatings specialist were as follows:

1. Continue removing all loose topcoat material from the torus and drywell on an outage basis.

2. Remove as much of the remaining topcoat material as possible, preferably all of the topcoat, from the drywell walls above the spray ring.

3. Allow the inorganic zinc primer exposed by the topcoat removal to remain untopcoated.

4. Use metal scrapers to remove the loose topcoat. Metal scrapers will more efficiently and completely remove the loose topcoat than the plastic tools currently used. Effective topcoat removal will require workers be near the surface to be scraped. The use of long reach rods or handles on the tools minimizes the effectiveness of the scraping effort.

5. Consider the use of power tools to remove the topcoat from the drywell walls above the spray ring. Proper operation and use of power tools is required to prevent damage to the primer.

6. Touchup repair damaged areas of the primer as required.

7. Touchup repair rusted surfaces in the torus.

The above recommendations were implemented during the March, 1989, scraping effort, except for the use of a power scraper, which was subsequently felt could damage the primer coat.

On March 28, 1989, YNSD and VY engineers inspected the results of the manual scraping effort, as summarized in BVY 89-69. It appeared from close-up visual inspection that the scraping efforts were high successful and eliminated virtually all loosely-adhering topcoat. Near the top of the drywell, approximately 70% of the topcoat had been removed (30% remaining). In the lower region of the upper drywell, approximately 30% had been removed (70% remaining). Overall, approximately 50% of the topcoat above the upper drywell spray ring header had been removed. The remaining topcoat was determined to be tightly adhering.

Interrogatory No. 79.

Interrogatory:

79. Please identify all documents relating to the inspections of paint scraping activities for drywell and torus, referenced on page 5 of Enclosure A of BVY 89-69.

Response:

1. Memorandum MES 120/72, H.F. Brannan to A.M. Shepard, "Peeling of Paint in the Torus," 2/25/72.

2. Memorandum ME 76/75, J.R. Hoffman to L.H. Heider, "Vermont Yankee Torus Paint Samples," 3/3/75.

3. Letter MEG 452/80, YAEC to O'Conners Associates Engineered Product, Inc., Subject "Carbo Zinc 11 Paint," 7/21/80.

4. YAEC Report #1409, "Drywell Temperature Evaluation," 2/1/84.

5. Memorandum VYS 25/84, L.A. Tremblay to A.C. Kadak, 2/17/84.

6. Memorandum VYB 84/216, R. W. Burke to A.C. Kadak, 2/7/84.

7. Memorandum File 11.0, R. J. Gianfrancesco to W.L. Wittmer, 1/9/84.

8. Letter NVY 86-33, USNRC to VYNPC, "Inspection Report No. 50-271/85-40," 2/20/86.

9. Letter File 2.1, D.A. Reid to R. J. Lodwick, "Service Request - Drywell Paint," 1/16/86.

10. Memorandum OPVY 289/86, R. L. Smith to R. J. Lodwick, 3/17/86, with attached evaluation, Memorandum VYS 46/86, C. Hansen to S.R. Miller, 3/11/86.

11. Memorandum VYB 86/414, R.J. Lodwick to S.R. Miller, "Disposition of SR 86-08, "Drywell Paint," 5/21/86.

12. Memorandum VYB 89/130, D.K. McElwee to S.R. Miller, "Service Request 89-16 - Drywell Paint Issue," 3/17/89.

13. Letter, J.O. No. 18973.00, R.L. Martin (Stone & Webster Engineering Corp.) to YAEC, "Drywell and Torus Coatings," 4/4/89.

14. Memorandum OPVY 250/89, R.L. Smith to D.A. Reid, "Drywell Paint Issue Resolution," 4/5/89, with attached Memorandum VYS 32/89, L.A. Tremblay to S.R. Miller, "Containment Paint Evaluation," 3/31/89.

15. Memorandum VYB 89/165, D.K. McElwee to S.R. Miller, "Disposition - SR 89-16, Drywell Paint Issue," 4/6/89.

16. YAEC Report #1696, "Evaluation of Containment Paint Degradation Effects at Vermont Yankee," L.A. Tremblay, 3/89.

17. Letter NVY 89-126, USNRC to VYNPC, "Inspection Report No. 50-271/89-80," 6/2/89.

18. Letter BVY 89-69, J.P. Pelletier (VYNPC) to USNRC, "Vermont Yankee Response to NRC Request for Information Regarding Condition of Drywell Paint (Inspection Report 89-80)," 7/1/89.

Interrogatory No. 80.

Interrogatory:

80. Please provide a description of the design of the strainers for the core spray, RHR, HPCI, RCIC pump suctions. As part of your description, identify all drawings and specifications that exist for the screen mesh of each.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to be related only to proposed Contention 6, which was excluded by the Board.

Response:

Without waiving the foregoing objection, but rather expressly relying upon the same, Vermont Yankee provides the following information:

The subject strainers were specified on GE Drawing No. 729E253 (VY Drawing File No. 5920-42) and on CB&I Drawing No. 233, Contract No. 9-6202, "Torus Penetrations" (VY Drawing File No. 6202-233), as follows:

> "The following stainless steel strainers shall be constructed of woven wire to ASTM A478-63 TP 304 and/or plate material to ASME A240 TP 304. Each strainer shall pass the respective flow and head loss requirements as shown above. Strainers may be of cylindrical or conical shape and sized to screen out particles greater than 1/8" diameter."

The flow and head loss table referred to is reproduced below:

Penetration	Flow (gpm)	1' Head Loss
X-224A & B	17,300	per 17,300 gpm
X-225	4,250	per 10,000 gpm
X-226A & B	4,500	per 4,500 gpm
X-227	400	per 10,000 gpm

Field verification done for CALC-VYC-417 describes the strainers as "1/8 in. holes on 3/16 centers", indicating plate material was used. The strainers are truncated cone shape.

The RHR suction strainers were later replaced with cylindrical shaped strainers. The strainer material is plate with 1/8" holes on 3/16" centers, duplicating the original. These strainers are shown on Drawing No. 5920-6764.

Interrogatory No. 81.

Interrogatory:

81. Please identify the procurement specifications for the core spray, RHR, HPCI and RCIC pumps.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to be related only to proposed Contention 6, which was excluded by the Board.

Response:

Without waiving the foregoing objection, but rather expressly relying upon the same, Vermont Yankee provides the following information:

The original procurement specifications are as follows:

G.E. Spec. No.	Title	Microfilm
21A1079	Standard Requirements for Auxiliary Steam Turbine Drives (HPCI)	36-746
21A1079AC	Auxiliary Steam Turbine Drives	36-764
21A1068	Standard Requirements for High Pressure Coolant Injection (HPCI) Pumps	36-708
21A1068AL	High Pressure Coolant Injection Pump	36-725
21A5822	Reactor Core Isolation Coolant Pump - General Requirements	36-2490
21A5822AF	RCIC Pump - Data Sheet	36-2507
21A5840	Auxiliary Steam Turbine Drives	36-2612
21A5840AJ	Auxiliary Steam Turbine Drives	36-2630
21A3300	Centrifugal Pump - Mechanical Seals	36-2630
21A3300AB	Core Spray Pump	7-36
21A3300AE	Residual Heat Removal Pump	5/35

Interrogatory No. 82.

Interrogatory:

82. Please state the manufacturer, model number and year of purchase for the core spray, RHR, HPCI and RCIC pumps.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to be related only to proposed Contention 6, which was excluded by the Board.

Response:

Without waiving the foregoing objection, but rather expressly relying upon the same, Vermont Yankee provides the following information:

The service, manufacturer, model number and original year of purchase for the subject pumps are listed in the following table:

Service (Date)	Manufacturer	Type/Model	GE PO#
CS (9/17/68)	Bingham-Willamette	12x16x14½ CVDS	205-H0371
RHR (11/7/67)	Bingham-Willamette	16x18x26 1-stage CVIC	205-H0922
HPCI (9/9/67)	Byron-Jackson	10x12x15 2-stage DVMX	205-H0457
RCIC (8/3/68)	Bingham-Willamette	4x6x9B MSD 5-stage	205-H0470

Note: Purchase order dates do not necessarily reflect date of manufacture or date of delivery.

Interrogatory No. 83.

Interrogatory:

83. Please state the minimum net positive suction head for the core spray, RHR, HPCI and RCIC pumps.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to be related only to proposed Contention 6, which was excluded by the Board.

Response:

Without waiving the foregoing objection, but rather expressly relying upon the same, Vermont Yankee provides the following information:

The minimum net positive suction heads for the subject pumps are provided in the following table:

Service	Pump Serial No.	NPSH
CS	280418	24' @ 3,000 gpm
	280419	24' @ 3,000 gpm
RHR	270839	26' @ 7,200 gpm
	270840	26' @ 7,200 gpm
	270841	26' @ 7,200 gpm
	270842	26' @ 7,200 gpm
wHPCI	671-S-1187	15' @ 4,250 gpm @ 4,000 rpm
	671-S-1192	52' @ 4,250 gpm @ 4,000 rpm
RCIC	270609	20' @ 416 gpm @ 4,500 rpm

Interrogatory No. 84.

Interrogatory:

84. Please identify all references documenting the minimum net positive suction head values stated in response to the forgoing interrogatory.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to be related only to proposed Contention 6, which was excluded by the Board.

Response:

Without waiving the foregoing objection, but rather expressly relying upon the same, Vermont Yankee provides the following information:

The references used to obtain the minimum net positive suction head information provided in the foregoing response are set forth in the following table:

Service	Pump Serial No.	Reference
CS	280418	Bingham Pump Co., Curve No. 27691
	280419	Bingham Pump Co., Curve No. 27692
RHR	270839	Bingham Pump Co., Curve No. 28567
	270840	Bingham Pump Co., Curve No. 27922
	270841	Bingham Pump Co., Curve No. 28469
	270842	Bingham Pump Co., Curve No. 28470
HPCI	671-S-1187	Byron-Jackson, Curve No. T-30057
	671-S-1192	Byron-Jackson, Curve No. T-30040
RCIC	270609	Bingham Pump Co., Curve No. 26679

Interrogatory No. 85.

Interrogatory:

85. For all minimum net positive suction head acceptance tests which were required or performed for the core spray, RHR, HPCI and RCIC pumps, state:

    a. The date of test.

b. The test organization.

c. The test report title and test report number.

d. The test specification or procedure by which the test was performed.

e. The date upon which the licensee or licensee's agent approved the test specification or test procedure.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to be related only to proposed Contention 6, which was excluded by the Board.

Response:

Without waiving the foregoing objection, but rather expressly relying upon the same, Vermont Yankee provides the following information:

a. The subject pumps were tested by their respective manufacturers and certified pump performance curves provided for each. The tests were witnessed by the buyer's representatives. The information provided from these pump curves and data sheets from the P.O. files is as follows:

System: Pump #, App. Date	Test Date	Test Organization	Test Report	Test. Spec.
CS:				
280418 11/03/69	11/20/69	Bingham Pump Co.	T-280418	SP-15
280419 11/03/69	11/24/69	Bingham Pump Co.	T-280419	SP-15
RHR System:				
270839 11/03/69	07/13/70	Bingham Pump Co.	T-270839	SP-15
270840 11/03/69	02/09/70	Bingham Pump Co.	T-270840-1	SP-15
270841 11/03/69	06/24/70	Bingham Pump Co.	T-270841-2	SP-15
270842 11/03/69	06/26/70	Bingham Pump Co.	T-270842-1	SP-15
HPCI System:				
671-S-1187 07/11/69	09/30/68	Byron-Jackson	T-29994	TP-4020
671-S-1192 07/11/69	10/09/68	Byron-Jackson	T30040	TP-3020
RCIC System:				
270609 N/A	02/28/69	Bingham Pump Co.	T-27609-1	SP-15

Interrogatory No. 86.

Interrogatory:

86. Please describe in detail all quality assurance and quality control inspection requirements for the tests identified in the preceding interrogatory.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to be related only to proposed Contention 6, which was excluded by the Board.

Response:

Without waiving the foregoing objection, but rather expressly relying upon the same, Vermont Yankee provides the following information:

The quality assurance program in effect was described in detail in the original FSAR, Appendix D. In addition, the procurement specifications for the subject pumps (identified in the response to Interrogatory No. 81) placed specific requirements on the seller with regard to inspection and testing and documentation. Each of the pump specifications required that the pump performance be tested in the seller's shop to demonstrate that it fulfilled the requirements of the specification. Performance tests were to be conducted in accordance with Hydraulic Institute Standards with at least five points being tested, including full capacity, shut-off and 125% of capacity. Required documentation typically included pump performance data, including curve of total head, NPSH, horsepower at operating conditions and efficiency, all plotted as a function of flow. Access by the buyers's representative to all testing during performance as well as final inspection before shipping was also typically required. Certified pump curves (identified in the response to Interrogatory No. 83), witnessed by the buyer's representative, were provided in accordance with the specification.

Interrogatory No. 87.

Interrogatory:

87. Please identify all documents which established the requirements described in response to the foregoing interrogatory.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to be related only to proposed Contention 6, which was excluded by the Board.

Response:

Without waiving the foregoing objection, but rather expressly relying upon the same, Vermont Yankee provides the following information:

VY FSAR, Amendment 11 (1970).
GE Specification No. 21A3300, Centrifugal Pump - Mechanical Seals.
GE Specification No. 21A1068, High Pressure Coolant Injection Pump.
GE Specification No. 21A5822, Reactor Core Isolation Coolant Pump - General Requirements.
GE Quality Control Plan No. 281, General Q.C. Plan for Residual Heat Removal Pumps, 01/05/67.

Interrogatory No. 88.

Interrogatory:

88. Please identify all quality assurance and quality control inspection reports and documentation, and reviews of test results, for the tests identified in interrogatory 85.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to be related only to proposed Contention 6, which was excluded by the Board.

Response:

Without waiving the foregoing objection, but rather expressly relying upon the same, Vermont Yankee provides the following information:

This information is set forth in the following table:

System: Pump #, Appr. Date	Test Date	Test Organization	Test Report	Pump Curve
CS:				
280418 12/17/70	11/20/69	Bingham Pump Co.	T-280418	27691
280419 12/17/70	11/24/69	Bingham Pump Co.	T-280419	27692
RHR System:				
270839 07/24/70	07/13/70	Bingham Pump Co.	T270839	28567
270840 Not legible	02/09/70	Bingham Pump Co.	T-270840-1	27922
270841 07/13/70	06/24/70	Bingham Pump Co.	T-270841-2	28469
270842 07/13/70	06/26/70	Bingham Pump Co.	T-270842-1	28470
HPCI System:				
671-S-1187 12/09/70	09/30/68	Byron-Jackson	T-29994	T-29994
671-S-1192 12/09/70	10/09/68	Byron-Jackson	T30040	T-30040
RCIC System:				
270609 N/A	02/28/69	Bingham Pump Co.	T-27609-1	26679

Interrogatory No. 89

Interrogatory:

89. Please provide the available net positive suction head for the core spray, RHR, HPCI and RCIC pumps.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to be related only to proposed Contention 6, which was excluded by the Board.

Response:

Without waiving the foregoing objection, but rather expressly relying upon the same, Vermont Yankee provides the following information:

Net positive suction head available ("$NPSH_A$") is a function of the pressure on the surface of the water being pumped, the static head due to the difference in elevation of the water surface and the pump elevation, friction losses due to flow in the suction piping which is a function of flow and piping and fittings losses, and vapor pressure of the water which is a function of temperature. There is, therefore, not a singular value for this parameter.

In addition, in the case of the RHR system, there may be modes of operation with either one or two pumps operating from a common suction line. Also, pump flows will be dependent on discharge resistance and "back pressure."

Since the conditions under which this parameter is to be determined are not stated in the question, the question cannot be definitively answered.

Some values from existing documents are provided in the following table:

Typical $NPSH_A$ Values

System (Source Reference)		$NPSH_A$	Conditions
Core Spray	(1)	34.2'	147°F water @ 3,000 gpm
RHR	(1)	31.1'	147°F water @ 7,000 gpm
	(2)	26.3'	165°F water @ 14,000 gpm
HPCI	(3)	52.5'	100°F water @ 4,250 gpm (suction from CST)

Source References:

(1) GE Calculation "VY LOCA DEBRIS" DRF No. 100-1713, Section 17.32, 01/10/86.

(2) PDCR 76-04, Enclosure E, Supporting Calculations (at 207).

(3) Letter VYB-1058, EBASCO to General Electric Company 10/27/68 (Sheet 16).

Interrogatory No. 90.

Interrogatory:

90. Please identify the calculations which support these values, including calculation title, date, number, and performing organization.

Objection:

Vermont Yankee objects to this interrogatory, on the ground that it appears to be related only to proposed Contention 6, which was excluded by the Board.

Response:

Without waiving the foregoing objection, but rather expressly relying upon the same, Vermont Yankee provides the following information:

The information requested appears in the response to the foregoing interrogatory.

Interrogatory No. 91.

Interrogatory:

91. Please state the size of the largest particle or debris which the core spray, RHR, HPCI and RCIC pumps, respectively, can pass.

Response:

Based on the strainers described above, the largest solid that the pump is required to pass is 1/8". We have not located any documents identifying the maximum size solid that the pumps are capable of passing.

Interrogatory No. 92.

Interrogatory:

92. Please describe in detail the bases for the sizes of particles identified in response to the previous interrogatory.

Response:

See above.

Interrogatory No. 93.

Interrogatory:

93. Please identify all documents which support the bases described in response to the foregoing interrogatory.

Response:

See above.

Interrogatory No. 94.

Interrogatory:

94. Please describe in detail the original licensing basis for the coating system in the drywell and torus.

Response:

None. The licensing basis for all plant systems is provided as set forth in the responses to Interrogatories Nos 6 and 9. The original FSAR did not

specifically state a licensing basis for the primary containment coating system; however, the coating system tends to act to protect the primary containment interior surface from oxidation degradation so that no other measures are necessary in order to account for the effect (if any) of such degradation on the ability of the primary containment to meet its design basis. Presently, the FSAR (page 12.2-16) states:

> "All interior and exterior drywell surfaces which are exposed to the atmosphere are protected from corrosion by application of a corrosion resistant coating material."

It should be observed that corrosion protection was originally thought to be a potential concern before the time the VY containment became inerted. A collateral effect of the inerting of the containment is the preclusion of the corrosion process during most circumstances.

Interrogatory No. 95.

Interrogatory:

95. Please describe in detail the current licensing basis for the coating system in the drywell and torus.

Response:

Please see the response to the foregoing interrogatory.

Interrogatory No. 96.

Interrogatory:

96. Please explain each and every reason why the topcoat was applied to the drywell and torus.

Response:

The topcoat was applied to provide a hard, relatively impervious outer coating to the drywell and torus interior surfaces to make decontamination efforts easier should the need arise. However, the topcoat does not play a part in meeting any safety design basis for the Primary Containment System as stated in the FSAR.

Interrogatory No. 97.

Interrogatory:

97. Identify all document references for:

    a. Original licensing basis for the coating system of the drywell.

    b. Original licensing basis for the coating system of the torus.

    c. Current licensing basis for the coating system of the drywell.

    d. Current licensing basis for the coating system of the torus.

Response:

See the response to Interrogatory No. 94.

Interrogatory No. 98.

Interrogatory:

98. Please identify the code or standard which governs the coating requirements for:

    a. The drywell.

    b. The torus.

Response:

a. None. However, the following guidance is used for touchup: Keeler & Long, Nuclear Technical Bulletin NTB-6, "Protective Coatings Systems for Nuclear Power Plants" (October 1985). (Meets and incorporates ANSI N5.9-1967, N101.2-1972, N101.4-1972 and N512-1974.)

b. Same as above.

Interrogatory No. 99.

Interrogatory:

99. LER 86-04, at page 2 of 5, identifies a review of maintenance requests. Please describe in detail the method by which this review was conducted.

Response:

The review referred to in LER 86-04, p. 2 of 5 was conducted by reviewing the maintenance history cards for any possible work which may have taken place on the circuitry in question. This review provided reference to specific maintenance requests, which were then obtained and reviewed. The review is documented via the VYNPS Commitment Tracking System (AP 0028).

Interrogatory No. 100.

Interrogatory:

100. LER 86-04, at page 5 of 5, identifies a departmental review of surveillance procedures. Please describe in detail the method this review is documented.

Response:

The review referred to in LER 86-04, p. 5 of 5 was conducted by department personnel cognizant of procedural changes who reviewed their respective department's surveillance procedures for any possible changes needed. This review is documented via the Vermont Yankee commitment tracking system (AP 0028).

Interrogatory No. 101.

Interrogatory:

101. On page 5 of 5 of LER 86-04, it is stated that "further assurance" is provided for systems which cannot be tested online by a "closer look [at] drawings and procedures."

a. Please describe in detail how this "closer look" is reflected in procedures.

b. Please describe in detail how this "closer look" is documented.

Response:

a. The "closer look" referred to a specific review of surveillance procedures, system drawings and drawing control methods that might have been subject to similar factors as those that contributed to the events described in LER 86-04. As a result of this "closer look," additional procedures and policies were revised. Among other things, the procedures now require a pin-to-pin continuity check of the firing

device prior to installation. The term "closer look" referred to this specific review effort and is therefore not reflected in any specific procedure.

b. Documentation of this as well as all other recommendations associated with this event are documented through Vermont Yankee's commitment tracking system.

Interrogatory No. 102.

Interrogatory:

102. Please identify all the Vermont Yankee personnel with whom LRS Incorporated personnel spoke during Visit #3-88 of October 10 - 13, 1988.

Objection and Request for Protective Order:

Vermont Yankee has been informed as follows:

It is a standard procedure with LRS Incorporated to maintain the confidentiality of personnel reports to LRS. This method of operation is to ensure employees of Vermont Yankee feel free to speak up without any possible concern of adverse effects upon their employment. Vermont Yankee has agreed that this method of operation contributes to the effectiveness of the independent review and thereby the safe operation of Vermont Yankee.

Based on the foregoing information supplied by LRS Incorporated, Vermont Yankee objects to this interrogatory and, to the extent required by the Rules of Practice, requests a protective order concerning the same.

Interrogatory No. 103.

Interrogatory:

103. The report of LRS Incorporated Visit #3-88, on page 7, contains the following statement:

> "Generally, the operators do not feel that Vermont Yankee pays sufficient heed to their desires for hardware repair and replacement."

Please identify the LRS Incorporated employee(s) who conducted this interview and reported this statement.

Response:

Charles M. Rice and Richard C. DeYoung.

Interrogatory No. 104.

Interrogatory:

104. Concerning the statement from the LRS Incorporated Report cited in the preceding interrogatory, please identify the operator or operators who held this view.

Objection and Request for Protective Order:

Vermont Yankee restates the objection and request for protective order set forth in the response to Interrogatory No. 102.

Interrogatory No. 105.

Interrogatory:

105. Describe your program to determine any significant aging mechanisms for the structures, systems and components of the Vermont Yankee plant, other than harsh environment equipment covered by 10 CFR 50.49.

Response:

The Vermont Yankee program to determine significant aging mechanisms is encompassed in the VY Maintenance and Surveillance Program. This program has been discussed in the response to Interrogatory No. 14. The key parts of this program with regard to the determination of significant aging mechanisms are AP 0021 ("Maintenance Requests"), AP 0200 ("Maintenance Program"), AP 0028 ("Operating Experience Review and Assessment/Commitment Tracking"), AP 0310 ("Surveillance, Preventative and Corrective Maintenance Program"), VY Users' Guide Root Cause Analysis, Corrective Action "White Paper," and management oversight of these programs. VY also participates in industry information exchange through NPRDS, which provides information on like components from other plants. Additionally, VY has been following the efforts of EPRI, at the Rowe and Monticello plants. These efforts reveal that most major power plant equipment will typically function reliably and safely for 70 years or more.

Interrogatory No. 106.

Interrogatory:

106. For your program to determine any significant aging mechanisms for the structures, systems and components of the Vermont Yankee plant, other than harsh environment equipment covered by 10 CFR 50.49, please identify the criteria that are used for determining if an aging mechanism is significant.

Response:

These criteria are established in part based on the input from the procedures and guidance identified in the response to the previous interrogatory. A qualified engineer reviews this information and performs an evaluation to disposition, and establishes corrective actions in response to the findings identified by the procedure (such as trends in AP 0200, failure causes in AP 0021, and the like). The significance of the degradation is established by the engineer in this evaluation by the review of the aging mechanism (for instance, corrosion), the rate of degradation, if any, and the function of the component, as established by the licensing basis.

It should be noted that the concept of "significance" is subject to misinterpretation. An aging mechanism could, at least in theory, be significant from a safety perspective because of its potential, if uncompensated for, to render a component non-functional. Typically, aging mechanisms have not been determined to be significant from this perspective because of the ability of regular inspection, surveillance and maintenance programs to detect and correct such effects. An aging mechanism can also be significant from the perspective of cost, and in particular avoidable cost, if, for instance, a component is exposed to an aging mechanism from which it might be cost effectively shielded, or if a component is subject to an aging mechanism to which a different component equal in function is immune.

Interrogatory No. 107.

Interrogatory:

107. Please state all bases for the criteria identified in response to the previous interrogatory.

Response:

Adherence to the licensing basis, which establishes the significance, from a safety perspective, of all degraded components is the basis.

Interrogatory No. 108.

Interrogatory:

108. Please identify all documents on which you rely for each basis stated in the previous interrogatory.

Response:

The documents relied upon have been previously identified in the responses to Interrogatories Nos. 6, 61, 62 and 63.

Interrogatory No. 109.

Interrogatory:

109. Identify your program policy directive and implementing procedures for qualifying safety system equipment other than those equipment covered by 10 CFR 50.49.

Response:

Interpreting "qualify" to mean the process by which it is determined that an item of equipment satisfies the specifications to which it was procured, the implementing program is YOQAP-1-A. The specific procedures depend upon the nature of the equipment, and can be determined by application of YOQAP-1-A. The procedures that implement the requirements of the Yankee Atomic Engineering Manual are set forth in Attachment 109-1.

Interrogatory No. 110.

Interrogatory:

110. Please provide the full statement of the entire basis that you rely upon for claiming that there is reasonable assurance (within the meaning of 10 CFR 50.57(a)(3)), if you so claim, that the paint undercoat (primer) of the drywell and torus will remain intact in the extended period, and that the metal surface will be protected. In addition, provide the following:

a. Identify each and every document upon which you rely for this assurance.

b. Identify and provide the technical qualifications of any person on whose expertise you rely for this assurance.

Response:

By its reference to 10 C.F.R. § 50.57(a)(3), SOV implies that there exists a legal requirement of the reasonable assurance stated in the interrogatory. Vermont Yankee is convinced that, as a statement of law, this implication is incorrect, and therefore it is not able to respond to the interrogatory precisely as framed.

Nonetheless, VY has a high degree of confidence that the ability of the primary containment to meet its design basis requirements will not in the future (either during the presently-licensed period of operations or the requested additional period of operations) be impaired by any effect of interior corrosion. The reasons for this high degree of confidence are as follows:

The recent evaluation by the SWEC Coating Specialist (see the response to Interrogatory No. 79, Reference 13) states that the paint undercoat (primer) is "sound, adherent, and nominally at the originally applied thickness. Corrosion protection of the shell and decontaminability are provided by the exposed primer." This same evaluation states that "Vermont Yankee's decision not to reapply topcoat material over the inorganic zinc primer is appropriate." Continued adherence to plant procedure OP 4115 ("Primary Containment Surveillance") will ensure that the primer coating is maintained. Since VY procedure requires inspection each operating cycle, any finding of corrosion is evaluated and repaired in timely fashion.

In addition, a side benefit of a nitrogen-inerted containment is that any potential oxidation of the containment surface is essentially precluded, since the containment must be inerted by Technical Specifications during plant operation.

a. See the response to Interrogatory No. 75.

b. Mr. Martin of SWEC. Reference 13 was prepared by Mr. Martin, whose qualifications are stated in the response to Interrogatory No. 75.

Interrogatory No. 111.

Interrogatory:

111. Inspection Report 89-80 (June 2,1989) contains the following statement:

"The licensee stated that the paint peeling problem has been evaluated ... the analysis of the paint chips indicated that the paint pieces will break up into fine pieces, so small that they will pass through the pump suction screens and core spray nozzle without causing clogging."

Please provide the full statement of the entire basis that you rely upon for claiming that there is reasonable assurance (within the meaning of 10 CFR 50.57(a)(3)), if you so claim, that peeling paint in containment will break into small pieces so small they will pass through the pump suction screens and core spray nozzle without causing clogging. In addition, provide the following:

a. Identify each and every document upon which you rely for this assurance.

b. Identify and provide the technical qualifications of any person on whose expertise you rely for this assurance.

Response:

The evaluation of paint chip transport is provided by a March 31, 1989, YNSD evaluation (see Response to Interrogatory No. 79, Reference 14). This evaluation concludes that, due to a variety of factors (time, transport mechanisms, relative densities, plant geometry) the probability of significant paint chip transport to the ECCS suction strainers in the torus is very low. However, for paint chips that do find their way to the ECCS suction strainers, the evaluation concludes that there would be no effect on ECCS pump operability. Failed topcoat has primarily occurred at the upper elevations of the drywell. The failed topcoat that has been inspected was found to be extremely brittle. During a postulated LOCA scenario, failed topcoat would fall from high in the drywell through a torturous path of piping and equipment and under turbulent conditions to the floor of the drywell, up into the downcomers, and then into the turbulence of the torus water volume. Due to its very brittle nature, any topcoat that found its way to an ECCS suction strainer would be reduced to particle size. Some paint particles would become impinged on any NUKON fibrous insulation that also may have found its way to the suction strainer. The ECCS suction strainers are sized to accommodate such a loss in NPSH available. Particles that did not become impinged on NUKON insulation would pass through the small mesh strainer and would be reduced still further in size by means of turbulent flow through the pump impeller. The remaining particles would not pose a threat to blockage of Core Spray Nozzles, and would not affect LPCI operation in any way since LPCI flow is provided to the reactor vessel as an injection flow and not through nozzles.

Reference 14 was prepared by Messrs. Tremblay, Hansen and Yasi, whose qualifications are set forth in the response to Interrogatory No. 77.

Interrogatory No. 112.

Interrogatory:

112. Please provide the full statement of the entire basis that you rely upon for claiming that there is reasonable assurance (within the meaning of 10 CFR 50.57(a)(3)), if you so claim, that drywell paint failure in the extended period will be in the form of small chips which have a higher density than water. In addition, provide the following:

a. Identify each and every document upon which you rely for this assurance.

b. Identify and provide the technical qualifications of any person on whose expertise you rely for this assurance.

Response:

By its reference to 10 C.F.R. § 50.57(a)(3), SOV implies that there exists a legal requirement of the reasonable assurance stated in the interrogatory. Vermont Yankee is convinced that, as a statement of law, this implication is incorrect, and therefore it is not able to respond to the interrogatory precisely as framed.

For confidence that the chips will be small, see the response to Interrogatory No. 111.

Confidence that the chips have a higher density than water is based on data from the SWEC report (Reference 13 identified in the response to Interrogatory No. 79) and from the physical testing discussed in reference 14 identified in response to Interrogatory No. 79.

b. See above.

Interrogatory No. 113.

Interrogatory:

113. Please provide the full statement of the entire basis that you rely upon for claiming that there is reasonable assurance (within the meaning of 10 CFR 50.57(a)(3)), if you so claim, that the comprehensive and formal maintenance program

document identified in BVY 89-75 is effective for providing clearly documented objectives, policies, responsibilities, authorities, programmatic controls, and comprehensive and structured reviews of Vermont Yankee plant maintenance requirements, at present, and for the extended period. In addition, provide the following:

a. Identify each and every document upon which you rely for this assurance.

b. Identify and provide the technical qualifications of any person on whose expertise you rely for this assurance.

Response:

Vermont Yankee does not so claim. Further, the SOV is in error if it believes that this cited document, standing alone, could provide the stated "reasonable assurance." The conclusion that Vermont Yankee activities authorized by the operating license, including the activity of performing required maintenance, were capable of being accomplished with "reasonable assurance" within the meaning of 10 C.F.R. 50.57(a)(3)(i), was established when Vermont Yankee was granted its original license. All subsequent safety evaluations issued and inspections by the USNRC have continually supported this conclusion. In fact, Vermont Yankee has continuously demonstrated the correctness of the finding that VYNPS is capable of being operated without endangering the health and safety of the public, within the meaning of 10 C.F.R. 50.57(a)(3)(i), over 18 years of safe and successful operation, without the cited document.

The production of the comprehensive and formal maintenance program is simply an effort to clearly document the effective maintenance practices that already exist at Vermont Yankee. As is clearly stated in the Maintenance Inspection Report (IR 89-80), Vermont Yankee's Maintenance Program at the time of the inspection was found without qualification to be "effective" in accomplishing its purpose and thus provided the required level of reasonable assurance. This was without a "comprehensive and formal" maintenance document. The effectiveness of our maintenance program is demonstrated by a number of independent parameters, including: 18 years of demonstrated successful operation, with a measurable improving trend in plant availability and capacity factor, independent assessments performed by others including the NRC, INPO, YNSD, QA audits/surveillances.

Inspection Report 89-80, after taking into account all of its subsidiary findings, concludes that "Vermont Yankee is implementing a generally effective maintenance program." Sections contained in the body of the report conclude that "The licensee has implemented an adequate program," "Vermont

Yankee has developed a maintenance program that implements the significant elements of the inspection tree." In BVY 89-75, we committed to develop and implement a comprehensive and formal maintenance program document to ensure continued good performance. That document has been developed.

We are continually assessing industry initiatives that would further enhance our programs. Vermont Yankee has a commitment to continuing independent assessments by internal and industry groups. Our demonstrated commitment to safety provide added assurance that our programs will continue to be effective. Evidence of our commitment to continually improve exists in many places including the 1989 NRC SALP Report which states:

> "Continuing management attention resulted in improved maintenance and surveillance programs. Strong performance in these areas occurred and demonstrated a strong commitment to maintenance of plant systems. Management routinely demonstrated a conservative approach to maintenance issues."

Vermont Yankee further believes that the "comprehensive and formal maintenance document" will function as expected based on the historical performance of Vermont Yankee and the fact that the document was produced to simply capture the existing and successful maintenance practices in place at Vermont Yankee in a formal document.

a. See above.

b. See above.

Interrogatory No. 114.

Interrogatory:

114. Please provide the full statement of the entire basis that you rely upon for claiming that there is reasonable assurance (within the meaning of 10 CFR 50.57(a)(3)), if you so claim, that the Computerized Maintenance Material Management System, identified in BVY 89-75, if implemented, will be effective for its intended use in the maintenance program in the extended period. In addition, provide the following:

    a. Identify each and every document upon which you rely for this assurance.

    b. Identify and provide the technical qualifications of any person on whose expertise you rely for this assurance.

Response:

By its reference to 10 C.F.R § 50.57(a)(3), SOV implies that there exists a legal requirement of the reasonable assurance stated in the interrogatory. Vermont Yankee is convinced that, as a statement of law, this implication is incorrect, and therefore it is not able to respond to the interrogatory precisely as framed.

As stated in the documents enumerated in the response to Interrogatory No. 17, VYNPS is examining the potential development of a CMMMS. The actual scope, expectation and supplier are not yet determined and, consequently, no claims regarding the system can be (or are) made until such time as that process is completed.

We add only that, if and to the extent that the question implies a notion that the function that might be performed by CMMMS can only be performed by CMMMS, the question is misinformed.

Interrogatory No. 115.

Interrogatory:

115. Please provide the full statement of the entire basis that you rely upon for claiming that there is reasonable assurance (within the meaning of 10 CFR 50.57(a)(3)), if you so claim, that a maintenance staff, with the requisite nuclear skills and knowledge, can be retained in the extended period. In addition, provide the following:

a. Identify each and every document upon which you rely for this assurance.

b. Identify and provide the technical qualifications of any person on whose expertise you rely for this assurance.

Response:

By its reference to 10 C.F.R. § 50.57(a)(3), SOV implies that there exists a legal requirement of the reasonable assurance stated in the interrogatory. Vermont Yankee is convinced that, as a statement of law, this implication is incorrect, and therefore it is not able to respond to the interrogatory precisely as framed.

Nonetheless, Vermont Yankee has no doubt (which, apart from legal implications, we use to connote even less residual uncertainty than is

connoted by a term such as "reasonable assurance") that a maintenance staff possessing the requisite skills and knowledge to continue to operate Vermont Yankee in the safe and efficient manner that it has been operated in for the last 18 years can be retained and maintained. This confidence derives from the following considerations:

- Vermont Yankee pays competitive wages within the state and within the nuclear industry. We participate in annual state and industry wage surveys to ensure that salary levels continue to attract and retain qualified workers.

- Vermont Yankee provides a comprehensive and competitive fringe benefit package for employees. A portion of our benefits program is designed to foster retention of employees by building in vested benefits based on years of service.

- According to Vermont Yankee employment records, our turnover rate in Maintenance occupations is very low. The average turnover rate of our Maintenance Mechanic staff for the five year period between 1985 and 1989 was 2.26%. The average turnover rate of our Instrument & Control Technicians for the same period was 4.6%. Both rates are indicative of a very stable workforce.

- Employment records for the Maintenance Staff indicate that over 70% of the individuals hired in the 1985-89 period were from the local labor force. This promotes stability and retention over the long run.

- The volume of applications for maintenance positions is currently more than sufficient to meet our needs. In 1989 alone, we received over 215 applications for Maintenance and Instrument & Control positions.

- The Vermont Labor Market Bulletin (2d Qtr. 1989) published by the Vermont Department of Employment and Training indicates 7,270 applicants in the state of Vermont seeking work with skills that appear to meet the needs of VY and 795 statewide job openings for these applicants.

- Contrary to the implication of this aspect of the contention, the positions in question do not require an applicant to possess nuclear-specific education or training, or specific educational qualification (*e.g.*, college degrees) the absence of which forecloses entire sets of persons from performing maintenance responsibilities superbly. We have confirmed with the author of the *Nucleonics Week* piece to which reference was

made in the contention that such workers were not within the scope of the concerns she intended to raise.

a. Any documents specifically used in the preparation of this answer will be made available for inspection upon request.

b. In responding to this interrogatory, Vermont Yankee has relied upon the collective experience and judgment of its management, most of which is believed to be non-technical in nature, as well as upon the stated conclusion of the author of the *Nucleonics Week* article in question that the article had been misued and misinterpreted by SOV in its contention.

Interrogatory No. 116.

Interrogatory:

116. Please provide the full statement of the entire basis that you rely upon for claiming that there is reasonable assurance (within the meaning of 10 CFR 50.57(a)(3)), if you so claim, that trend analyses will determine decreased equipment reliability and expected (design) life in the extended period. In addition, provide the following:

a. Identify each and every document upon which you rely for this assurance.

b. Identify and provide the technical qualifications of any person on whose expertise you rely for this assurance.

Response:

By its reference to 10 C.F.R. § 50.57(a)(3), SOV implies that there exists a legal requirement of the reasonable assurance stated in the interrogatory. Vermont Yankee is convinced that, as a statement of law, this implication is incorrect, and therefore it is not able to respond to the interrogatory precisely as framed.

Vermont Yankee does not claim that trending alone will "determine decreased equipment reliability and expected (design) life in the extended period." Further, SOV is in error if its believes that trend analysis, by itself, could provide the stated "reasonable assurance." The conclusion that the activities authorized by the VYNPS operating license are capable of being undertaken with reasonable assurance of no danger to the health and safety of the public were established when VY was granted its original license and demonstrated

ever since, and the nature of this conclusion is not changed by the operating period extension at issue.

Trending at VY is done in accordance with AP 0200 ("Maintenance Program"), Appendix E ("Maintenance Department Trending Program"). The Maintenance Department trends equipment degradation, repetitive corrective maintenance of equipment, and probable cause of failures per Appendix E. Input to the trend program may come from AP 0021 ("Maintenance Requests") and AP 0028 ("Operating Experience Review and Assessment/ Commitment Tracking"). The results of trend evaluations are reported to the Maintenance Department Supervisor by memo along with all supporting documentation.

Trend analysis in general can provide insights into the reliability of equipment, if (and only if) this information is used in conjunction with other efforts, such as reviewing the way maintenance is performed, recognizing the limits of the particular design of a component and taking into account the continuous flow of technical information regarding potential problems with similar components at other plants that is available from the industry. All of this information must then be analyzed by knowledgeable people and if these people believe a potential problem exists, the specifics of the failures are reviewed, and an assessment with corrective action recommendations is sent to the Maintenance Supervisor. The Maintenance Department Supervisor is responsible for dispositioning these recommendations. Vermont Yankee upper management is informed of any adverse results of these trends though the Maintenance Supervisor.

Trending analysis at Vermont Yankee is generally based on conservative limits with conservative safety factors applied. Trending analysis has led to UPS replacement, Service Water System upgrade and battery replacements. Vermont Yankee also reviews the efforts of the industry in improving analytical techniques and has recently enhanced its program using some of these improved techniques.

We add only that, while we have high expectations for the benefits of the trending analysis now, heretofore, and to be in the future employed at VYNPS, we do not claim that trending analysis is the only means by which the maintenance function is capable of being performed, that any failure of our expectation regarding the efficacy of trending would translate into a failure of the maintenance effort, and that therefore the ability to have continued reasonable assurance that VYNPS is capable of being operated without endangering the health and safety of the public.

a. See above.

b. The individuals of the Maintenance Department Engineering Staff.

Interrogatory No. 117.

Interrogatory:

117. Please provide the full statement of the entire basis that you rely upon for claiming that there is reasonable assurance (within the meaning of 10 CFR 50.57(a)(3)), if you so claim, that all components with design lives less than Vermont Yankee plant service life will be determined, and replaced, requalified or upgraded. In addition, provide the following:

a. Identify each and every document upon which you rely for this assurance.

b. Identify and provide the technical qualifications of any person on whose expertise you rely for this assurance.

Response:

Vermont Yankee does not believe that there is any requirement, either for the present application or in general, of "reasonable assurance" under 10 C.F.R. § 50.57(a)(3)(i) with regard to whether such events will occur in the future. Vermont Yankee does believe that there is a requirement under 10 C.F.R. § 50.57(a)(3)(ii) that the regulations promulgated by the Commission that address this topic, such as 10 C.F.R. § 50.55a(g) and 10 C.F.R. § 50.49, will be followed.

The capability of Vermont Yankee to be operated without danger to the public, within the meaning of 10 C.F.R. § 50.57(a)(3)(i) was established during the granting of Vermont Yankee's original operating license. That finding was not then, and is not now or at any other time, dependent upon any assumption regarding the replacement or other amelioration of the exhaustion of design life of components. Indeed, the fact that some components will not last for the duration of the plant's potential service life was anticipated by the original designers and by the Commission during the granting of Vermont Yankee's original license and acceptance of the Technical Specifications. The Technical Specifications provide the "limiting conditions for operation" which govern the plant responses to equipment inoperabilities.

This interrogatory assumes that "design life" tracking is the exclusive means by which age degradation is controlled. This assumption is not accurate. To some extent, "installed life" tracking is employed: In each case for which a

replacement interval has been established for a component, based on vendor information, VY-specific or industry experience, or other information, an appropriate schedule for the replacement of the component is established within the maintenance program (VISI records), and such replacements have been and continue to be carried out on a routine basis. However, the philosophy of such programs as inspection, surveillance and preventative maintenance is that exclusive reliance is not placed upon "design life" tracking. Further, industry programs have shown that many components are capable of lasting much longer than their original specified "design life" with no loss of safety margin.

Thus, once the capacity of Vermont Yankee to be operated safely is established, the degree of assurance required that the steps that may be necessary or helpful to the achievement of that capacity is a matter of Commission determination (as to legal requirements) and Vermont Yankee determination (as to engineering requirements). The former is supplied by such regulations as 10 C.F.R. § 50.55a(g). The latter has been continuously supplied, and modified as appropriate, by Vermont Yankee, and is reflected in the aggregate of the plant procedures, including but by no means limited to the procedure for routine replacements described above.

Vermont Yankee has a demonstrated history of successfully implementing these programs. Inspection Report 89-80, the NRC maintenance team inspection, concludes that:

> "Vermont Yankee is implementing a generally effective maintenance program."

Sections contained in the body of the report conclude that:

> "The Licensee has developed a functional work control program."
>
> "It was apparent that the staff and management appreciate the role that judicious predictive, preventive and corrective maintenance play in overall plant performance."
>
> "Vermont Yankee has developed a maintenance program that implements the significant elements of the inspection tree."
>
> "The failure trending program under development will probably contribute significantly to the improvement of the predictive maintenance program."

Vermont Yankee is committed to continue to maintain effective ISI/IST programs in accordance with the Federal regulations. We are continually assessing industry initiatives that could further enhance the effectiveness of

our programs. This, along with independent assessments that will continue to occur and our demonstrated commitment to safety provide a high level of confidence that our programs will be effective.

a. See above.

b. The person(s) on whose expertise we rely on for this assurance are the employees of the company.

Interrogatory No. 118.

Interrogatory:

118. Please provide the full statement of the entire basis that you rely upon for claiming that there is reasonable assurance (within the meaning of 10 CFR 50.57(a)(3)), if you so claim that the maintenance and surveillance program in the extended period will be effective in limiting containment leakage to the leakage limits in the current licensing basis. In addition, provide the following:

a. Identify each and every document upon which you rely for this assurance.

b. Identify and provide the technical qualifications of any person on whose expertise you rely for this assurance.

Response:

The requirements of 10 C.F.R. § 50.57(a)(3), insofar as they are applicable to containment leak rate testing, are met by compliance with the requirements of 10 C.F.R., Part 50, Appendix J, which is the applicable substantive Commission regulation on this subject.

The Vermont Yankee Containment Integrated Leak Rate Testing Program has been determined to meet the requirements of 10 C.F.R., Part 50, Appendix J, and is implemented by OP 4029 ("Type A-Primary Containment Integrated Leak Rate Testing"). The activities are performed under the control of the Type A Test Coordinator, who is an individual experienced in performing containment leak rate testing. In addition, following each test, a comprehensive test report is submitted to the NRC. This report is reviewed to ensure that the applicable requirements and acceptance criteria have been met in each case. Prior to performing the Type A test, all personnel involved are trained by the test coordinator in all aspects of the test and the test procedure. Finally, Type A tests are typically monitored by NRC inspection personnel.

a. See above.

b. D. L. Phillips, Test Coordinator, qualifications available. J. M. DeVincentis, Test Coordinator, qualifications available.

Interrogatory No. 119.

Interrogatory:

119. Please provide the full statement of the entire basis that you rely upon for claiming that there is reasonable assurance (within the meaning of 10 CFR 50.57(a)(3)), if you so claim, that age-related degradation of active and passive mechanical components will be identified and corrected by the inservice inspection/testing and maintenance program, and that component functional capability will be maintained, in the extended period. In addition, provide the following:

a. Identify each and every document upon which you rely for this assurance.

b. Identify and provide the technical qualifications of any person on whose expertise you rely for this assurance.

Response:

Please see the response to Interrogatory No. 117.

We add only that, implicit in the question is the notion that the measure of the "reasonable assurance" that VYNPS is capable of being operated without endangering the health and safety of the public is exactly equal to the degree of confidence one has that functional degradation will always be detected at precisely the right moment, on a one-for-one, component-by-component, basis. This is not so. For a host of reasons, including system redundancy, function redundancy and design defense in depth, the compound degree of confidence that VYNPS is not incapable of being operated safely is far higher than finite degree of confidence one has in any one of the contributing factors to that overall confidence. SOV's use of the regulatory term "reasonable assurance," therefore, is in VYNPS's view, incorrect. Our response does not endorse, and should not be taken as endorsing, either SOV's apparent interpretation of the applicable regulations or the philosophy of nuclear power plant licensing that the question implies.

a. The following are the principal documents relied upon to provide this assurance:

ASME Section XI.

Vermont Yankee Inservice Testing Program.

Vermont Yankee Inservice Inspection Program.

AP 0021 Maintenance Requests.

AP 0028 Operating Experience Review and Assessment/Commitment Tracking.

AP 4000 Surveillance Testing Control.

DP 4025 Inservice Inspection.

OP 4026 Pressure Boundary Repair Procedure.

OP 4029 Type A - Primary Containment Integrated Leak Rate Testing.

OP 4030 Type B and C Primary Containment Leak Rate Testing.

OP 4101 RPV Operational Hydro Test.

AP 6000 Plant Design Change Requests.

AP 6004 Engineering Design Change Requests.

b. The following is a list of those personnel most involved in these processes. Resumés are available for inspection that provide qualifications:

Dennis Girroir
Mark Stello
Dennis Legere
Eugene Van Boman
James Calchera
Edward Taintor
[Shift Engineers]

Interrogatory No. 120.

Interrogatory:

120. Please provide the full statement of the entire basis that you rely upon for claiming that there is reasonable assurance (within the meaning of 10 CFR 50.57(a)(3)), if you so claim, that structural integrity of Vermont Yankee plant structures will be maintained in accordance with the current licensing basis in the extended period. In addition, provide the following:

a. Identify each and every document upon which you rely for this assurance.

b. Identify and provide the technical qualifications of any person on whose expertise you rely for this assurance.

Response:

Assurance of the proposition cited is provided by the obligation to conform to, and by Vermont Yankee's demonstrated history of conforming to, the "regulations in this chapter" as provided in 10 C.F.R. § 50.57(a)(3)(ii).

The maintenance of the structural integrity of plant structures is assured by the Maintenance and Surveillance program described above in the response to Interrogatory No. 14, together with the continuing obligation that VYNPS meet its design basis and any applicable substantive Commission regulations. This is accomplished by routine tours and inspections of the plant structures by management, by the Auxiliary Operators (who are required by procedure AP 0150 ("Responsibility and Authorities of Operations Department Personnel") to "[r]eport to the Control Room any abnormal plant or equipment conditions and take further procedurally required steps to initiate corrective action") or by any other individual who notices degradation. Procedure AP-0021 ("Maintenance Requests") provides that "the individual who notices the deficiency MUST generate or cause generation of a Maintenance Request." The VY Surveillance Program contains procedures that provide additional assurance, as required by the Commission and applicable codes and standards adopted by the Commission as regulatory requirements. Examples include the Primary Containment Type A test (described in the response to Interrogatories Nos. 19 and 118), the Secondary Containment Integrity Test, the Cooling Tower Inspection and Maintenance.

a. The documents relied upon are those identified in the response to Interrogatories Nos. 12 and 14, together with the regulations to which reference is made in 10 C.F.R. § 50.57(a)(3)(ii).

b. The personnel relied upon are those who, by function, have been assigned responsibilities and authorities by the cited procedures.

Interrogatory No. 121.

Interrogatory:

121. Please provide the full statement of the entire basis that you rely upon for claiming that there is reasonable assurance (within the meaning of 10 CFR 50.57(a)(3)), if you so claim, that any policy and implementing procedures for controlling and updating manufacturer technical manuals, contemplated in BVY 89-75, will be effective for this purpose in the extended period. In addition, provide the following:

a. Identify each and every document upon which you rely for this assurance.

b. Identify and provide the technical qualifications of any person on whose expertise you rely for this assurance.

Response:

By its reference to 10 C.F.R. § 50.57(a)(3), SOV implies that there exists a legal requirement of the reasonable assurance stated in the interrogatory. Vermont Yankee is convinced that, as a statement of law, this implication is incorrect, and therefore it is not able to respond to the interrogatory precisely as framed.

Confidence that this function will be performed in the future is based upon (i) the adequacy of AP 0312 ("Equipment Technical Information"), (ii) the commitment of VYNPS to that procedure, and (iii) the commitment of VYNPS to revise or modify that procedure when, as and if experience indicates that such revisions or modifications are appropriate.

a. AP 0312.

b. See the response to Interrogatory No. 16.

Interrogatory No. 122.

Interrogatory:

122. Please provide the full statement of the entire basis that you rely upon for claiming that there is reasonable assurance (within the meaning of 10 CFR 50.57(a)(3)), if you so claim,

that revisions to the Maintenance Request Procedure (AP 0021), contemplated in BVY 89-75, will be effective to control post maintenance testing in the extended period. In addition, provide the following:

a. Identify each and every document upon which you rely for this assurance.

b. Identify and provide the technical qualifications of any person on whose expertise you rely for this assurance.

Response:

By its reference to 10 C.F.R. § 50.57(a)(3), SOV implies that there exists a legal requirement of the reasonable assurance stated in the interrogatory. Vermont Yankee is convinced that, as a statement of law, this implication is incorrect, and therefore it is not able to respond to the interrogatory precisely as framed.

Confidence that post-mainteance testing will be controlled dervies from Appendix C of AP 0021, Rev. 17, which provides for a thorough review of maintenance work performed and proper identification of testing criteria that will, when completed, provide reasonable assurance that the maintenance performed has corrected the problem and not created any additional problems.

a. See above.

b. See the response to Interrogatories Nos. 2 and 3.

Interrogatory No. 123.

Interrogatory:

123. Please provide the full statement of the entire basis that you rely upon for claiming that there is reasonable assurance (within the meaning of 10 CFR 50.57(a)(3)), if you so claim, that Maintenance Requests for completed maintenance activities will be completed in a timely fashion in the extended period. Indicate the basis for this assurance. In addition, provide the following:

a. Identify each and every document upon which you rely for this assurance.

b. Identify and provide the technical qualifications of any person on whose expertise you rely for this assurance.

Response:

By its reference to 10 C.F.R. § 50.57(a)(3), SOV implies that there exists a legal requirement of the reasonable assurance stated in the interrogatory. Vermont Yankee is convinced that, as a statement of law, this implication is incorrect, and therefore it is not able to respond to the interrogatory precisely as framed.

Maintenance Request review following completion of maintenance activities will be ensured during the extended period by compliance to the below listed procedures. Additionally, as stated in the VY response to the Maintenance Team Inspection Report (BVY 89-75), we believe that the recent organizational changes will serve to ensure timely review by allowing the senior engineers to focus more attention on this review.

AP 0021 Maintenance Requests

AP 0200 Maintenance Department Program

AP 0310 Instrument and Control Surveillance, PM and CM program.

Since the engineering review of completed maintenance activities was initiated, there have been a total of 244 root cause analyses initiated. Presently, there are 41 (16.8%) outstanding (open). This amount of open items is easily manageable with the existing staff. Vermont Yankee views the Maintenance Program as a dynamic program, and procedures will continue to be revised as necessary to enhance the Maintenance Program and assure its continued effectiveness in all areas including review of completed maintenance activities. All personnel who interface with these programs and procedures receive training in their use in addition to periodic refresher training. In addition, revisions to these items will be followed with any necessary training in the changes.

Table of Attachments

ATTACHMENT 2-1

SUPERVISORS

NAME	EMPLOY DATE	POSITIONS HELD	DATE PROMOTED
Arensmeyer, Jack W.	4/26/71	I&C Technician	7/1/79
		Technical Assistant	4/27/81
		Engr. Assistant	2/6/84
		I&C Foreman	To Present
Bowman Jr., Eugene V.	9/2/80	AO	8/9/82
		ACRO	11/16/86
		SCRO	
Branch, Richard L.	9/23/68	Shift Supervisor	3/1/76
		Assistant Ops Supervisor	8/1/81
		Ops Supervisor	7/16/83
		Assistant Ops Supervisor	11/16/84
		Asst. to Ops Supervisor	2/12/90
		INPO Loaned Employee	To Present
Bronson, Kevin H.	10/21/81	AO	9/11/83
		ACRO	6/21/87
		SCRO	To Present
Cantrell, Lonnie J.	8/27/73	AO	11/20/77
		ACRO	6/15/80
		CRO	12/31/81
		SCRO	3/22/87
		Ops. Training Inst.	5/8/88
		Shift Supervisor	To Present
Desilets, John J.	7/28/70	AO	5/1/72
		ACRO	5/13/73
		CRO	10/17/76
		SCRO	12/6/80
		Shift Supervisor	6/1/83
		Sr. Engineer	7/16/83
		Ops. Supervisor	8/16/85
		Shift Supervisor	To Present
Devercelly, Richard W.	2/6/84	Asst. Training Inst.	3/6/85
		Instructor	6/1/86
		Simulator Instructor	2/1/88
		SCRO	To Present

Doane, Lawrence E.	3/26/73	AO	11/20/77
		ACRO	5/11/80
		CRO	12/31/81
		SCRO	6/16/87
		Shift Supervisor	5/16/89
		Asst. Ops. Supervisor	To Present
Donnelly, Patrick J.	10/19/70	I&C Technician	12/1/76
		Technical Assistant	4/9/79
		I&C Supervisor	7/1/85
		Maintenance Superintendent	To 1/10/90
Faupel, Robert F.	11/15/76	AO	4/13/80
		ACRO	8-29-82
		CRO	8/3/86
		SCRO	To Present
Finnell, Wayne F.	4/19/71	APM	10/19/72
		PM	7/19/79
		LPM	12/16/79
		Assistant Foreman	5/1/87
		Maintenance Foreman	To Present
Herron, John T.	1/29/79	AO	4/13/80
		ACRO	12/13/81
		CRO	8/29/82
		SCRO	11/30/84
		Shift Supervisor	4/20/87
		Tech. Program Manager	1/1/89
		Operations Supervisor	To Present
Keith, Ronald M.	2/22/79	AO	6/1/81
		ACRO	12/26/82
		CRO	11/25/84
		SCRO	3/7/88
		Project Engineer	6/5/89
		SCRO	To Present
King, Wayne	12/17/79	AO	6/1/81
		ACRO	7/3/83
		CRO	6/21/87
		SCRO	To Present
Legere, Dennis J.	7/7/80	Nuclear Safety Engineer	3/6/83
		Shift Engineer	6/1/83
		Maintenance Engineer	12/15/86
		Sr. Engineer	To Present

Lindquist, William A.	2/6/70	AO	6/1/70
		CRO	11/11/73
		SCRO	8/1/81
		Shift Supervisor	To Present
Lipinski, Frank P.	1/9/84	Auxiliary Operator	8/11/85
		I&C Technician	7/16/88
		Assistant Foreman	To Present
Lopriore, Richard P.	7/24/78	APM	6/25/79
		Engineering Assistant	3/1/81
		Technical Assistant	12/1/82
		Sr. Engineer	4/16/85
		Maintenance Supervisor	To Present
Massey, Edwin J.	5/8/78	Technical Assistant	4/28/80
		Construction Supervisor	To Present
Metcalf, Barry W.	2/9/70	AO	6/1/70
		CRO	3/1/73
		SCRO	3/29/74
		Shift Supervisor	8/1/81
		Asst. Ops. Supervisor	7/16/83
		Shift Supervisor	To Present
Mossey, Richard G.	5/25/80	Technical Assistant	12/1/82
		Construction Supervisor	To Present
Nichols, Craig J.	8/7/89	Senior Engineer	To Present
Phillips, David L.	7/14/80	Electrical Engineer	4/27/81
		TA/I&C	11/1/82
		Sr. Electrical Engineer	To Present
Pichette, Brian R.	12/13/78	AO	4/13/80
		ACRO	5/5/81
		CRO	12/2/84
		SCRO	To Present
Pittman Jr., William M.	2/7/79	AO	4/13/80
		ACRO	12/13/81
		CRO	6/12/83
		SCRO	5/16/89
		Acting Shift Supervisor	To Present

Porter, Dean C.	11/16/70	AO	3/29/74
		ACRO	10/24/76
		CRO	6/15/80
		SCRO	5/16/83
		Shift Supervisor	5/1/89
		Technical Program Manager	To Present
Selby, Robert A.	6/1/71	I&C Technician	6/18/81
		Sr. Technician	2/6/84
		Assistant Foreman	To Present
Sutton, Harry S.	3/14/73	AO	10/3/76
		ACRO	1/28/79
		CRO	5/1/83
		SCRO	11/25/84
		Shift Supervisor	To Present
Watson, Michael T.	7/25/73	I&C Technician	3/30/87
		Sr. I&C Engineer	To Present
Watson, Terril A.	6/19/78	I&C Technician	11/17/80
		Ops. Training Assistant	7/6/82
		Instructor	12/13/82
		I&C Engineer	8/19/84
		Sr. Engineer	7/1/85
		I&C Supervisor	To Present
Wittmer, William L.	6/29/75	Engineering Assistant	11/9/75
		Technical Assistant	6/1/78
		Construction Supervisor	3/6/80
		Maintenance Supervisor	11/23/8?
		Maintenance Superintendent	5/1/84
		Project Manager	10/16/86
		Construction Superintendent	To Present

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ATTACHMENT 3-1

WORKERS

NAME	EMPLOY DATE	POSITIONS HELD	DATE PROMOTED
Anderson, Phillip L.	2/5/90	Cont. Inst. Spec.	To Present
Atkins, Harvey F.	1/26/70	APM	11/1/70
		Plant Mechanic	11/22/72
		Lead Plant Mechanic	8/16/85
		Assistant Foreman	To Present
Barber, Rae S.	8/17/87	APM	4/17/89
		Plant Mechanic	4/24/89
		I&C Technician	To Present
Benedict, George G.	8/17/87	Utility Person	To Present
Boguslawski, Henry	4/22/70	APM	10/22/71
		Plant Mechanic	9/15/74
		LPM	8/16/85
		Assistant Foreman	To Present
Bristol, Alan F.	2/25/80	AO	8/2/82
		ACRO	2/25/87
		Sr. AO	To Present
Budzik, Stephen R.	6/12/89	AO	To Present
Butterfield, Robert E.	11/2/70	AO	4/23/73
		ACRO	5/7/75
		CRO	1/28/79
		Tech. Assistant	4/14/85
		AO	10/9/87
		Sr. AO	To Present
Calchera, James F.	10/3/89	Engineer	To Present
Chancey, Shirley J.	1/25/88	Assistant Plant Mechanic	9/25/88
		Plant Mechanic	To Present
Chapin, Donald C.	7/7/86	Utility Person	To Present
Chapin, Lawrence H.	7/26/77	Assistant Plant Mechanic	1/26/79
		Plant Mechanic	10/15/86
		Sr. Plant Mechanic	To Present
Clark, Anthony A.	8/10/87	Utility Person	To Present

Christmas, William A.	6/15/81	APM	2/15/82
		Plant Mechanic	6/15/87
		I&C Technician	To Present
Coburn, Leah	1/1/83	Clerk	To Present
Conkey, Edward W.	2/3/80	Assistant Plant Mechanic	6/18/81
		Plant Mechanic	6/18/88
		Sr. Plant Mechanic	To Present
Corey, Gail M.	7/10/89	Clerk	To Present
Current, Robert A.	5/27/86	I&C Technician	11/10/86
		Engineering Assistant	To Present
Cynoski, Chester F.	8/29/83	Shift Engineer	12/16/88
		Maintenance Engineer	To Present
Faulkner, Gordon A.	7/12/71	Plant Mechanic	5/7/78
		Lead Plant Mechanic	8/16/85
		Assistant Foreman	To Present
Field, Howard A.	11/3/86	Assistant Plant Mechanic	7/3/87
		Plant Mechanic	To Present
Fortin, Henry E.	9/16/74	Utility Man	6/7/82
		Lead Utility Man	To Present
Garland, Matthew A.	5/19/86	Assistant Plant Mechanic	1/19/87
		Plant Mechanic	To Present
Gaspardino, Alan A.	6/20/84	Utility Man	1/1/85
		Assistant Plant Mechanic	9/1/85
		Plant Mechanic	To Present
Gleason, Randall F.	8/8/88	Utility Person	To Present
Golonka, Joseph W.	6/18/76	Clerk	3/1/84
		Technician	10/30/89
		Materials Planner	To Present
Gouin, Wilfred L.	6/15/81	Assistant Plant Mechanic	2/15/82
		Plant Mechanic	2/15/89
		Sr. Plant Mechanic	To Present
Graves, Jeffrey A.	6/1/82	Utility Person	To Present
Gregor, Roy D.	1/30/89	Cont. Inst. Spec.	To Present
Hallonquist, David B.	12/3/84	Engineer	To Present

Halvey, James J.	8/24/70	I&C Technician	7/22/73
		Technical Assistant	12/1/76
		I&C Technician	6/18/81
		Sr. I&C Technician	To Present
Hassell, Norman H.	9/5/89	AO	To Present
Heilman, Harry S.	8/25/78	I&C Technician	8/25/82
		Sr. Technician	4/15/84
		Engineering Assistant	1/15/86
		I&C Engineer	To Present
Hopta, Dennis W.	5/17/82	Clerk/I&C	6/1/84
		I&C Technician	6/1/88
		Sr. I&C Technician	To Present
Jadlowski, Donald P.	4/22/74	AO	11/20/77
		ACRO	2/12/78
		AO	4/22/84
		Sr. AO	To Present
Jarvis Jr., Donald P.	4/19/82	Assistant Plant Mechanic	12/19/82
		Plant Mechanic	12/19/89
		Sr. Plant Mechanic	To Present
Jenks, Leigh R.	6/3/85	Tool Room Attendant	11/11/85
		Assistant Plant Mechanic	7/11/86
		Plant Mechanic	To Present
Jennison, Neal C.	1/2/86	AO	3/19/90
		ACRO	To Present
Jerz, Paul E.	6/26/89	AO	To Present
Kelleher, Laura J.	12/27/77	Clerk	To Present
Kellom, James F.	3/25/85	Utility Person	To Present
Kingsley III, Carl W.	7/1/85	Assistant Plant Mechanic	3/1/86
		Plant Mechanic	To Present
Knechtly, Darrell L.	1/20/81	AO	3/17/81
		I&C Technician	3/17/85
		Sr. I&C Technician	To Present
Leach, Kevin M.	5/2/88	Assistant Plant Mechanic	1/2/89
		Plant Mechanic	To Present
Lee, Walter C.	1/4/86	AO	To Present

Levesque, Norman	12/4/78	I&C Technician	12/4/82
		Sr. I&C Technician	To Present
Louttit, Ralph L.	8/6/85	Cont. Inst. Spec	To Present
Mackin, Timothy E.	9/11/89	Assistant Plant Mechanic	To Present
McKinnon, William J.	2/11/80	Assistant Plant Mechanic	6/18/81
		Plant Mechanic	8/27/85
		Lead Plant Mechanic	To Present
Metevier, Dennis E.	11/19/84	Assistant Plant Mechanic	7/19/85
		Plant Mechanic	9/12/89
		Lead Plant Mechanic	To Present
Murphy, Sylvester	1/3/78	APM	12/14/81
		Plant Mechanic	5/8/84
		AO	5/25/86
		Plant Mechanic	8/3/86
		AO	To Present
Naeck, Brian K.	11/17/87	AO	To Present
Nichols, Geoffrey E.	6/8/81	AO	8/2/82
		ACRO	5/29/84
		AO	6/8/88
		Sr. AO	To Present
Niedzwiecki, David J.	1/3/77	Assistant Plant Mechanic	7/3/78
		Plant Mechanic	7/3/85
		Sr. Plant Mechanic	9/25/87
		Lead Plant Mechanic	To Present
Painter, Douglas R.	2/16/88	Assistant Plant Mechanic	10/16/88
		Plant Mechanic	To Present
Paust, Norman T.	10/2/72	I&C Technician	6/18/81
		Sr. I&C Technician	To Present
Perry, Michael G.	12/29/86	Assistant Plant Mechanic	8/29/87
		Plant Mechanic	To Present
Politis, Leon A.	12/8/87	Utility Person	To Present
Pond, Gary G.	3/2/87	Assistant Plant Mechanic	11/2/87
		Plant Mechanic	To Present
Primavera, Stephen W.	8/7/89	Engineer	To Present

Prokowich, Nicholas	1/29/79	Assistant Plant Mechanic	7/29/80
		Plant Mechanic	7/29/87
		Sr. Plant Mechanic	To Present
Robert, Michael S.	5/17/82	I&C Technician	6/18/81
		Sr. I&C Technician	To Present
Rose, Christopher C.	2/27/84	Assistant Plant Mechanic	10/27/84
		Plant Mechanic	To Present
Rose, Peter G.	6/26/89	AO	To Present
Sak, Roger C.	1/2/79	Assistant Plant Mechanic	7/2/80
		Plant Mechanic	11/17/86
		Lead Plant Mechanic	8/8/87
		Assistant Foreman	To Present
Sherburn, Michael D.	1/19/81	AO	1/19/88
		Sr. AO	To Present
Shuman, Richard F.	7/7/86	AO	3/19/90
		ACRO	To Present
Siciak, Albert D.	10/28/85	AO	3/19/90
		ACRO	To Present
Silva, Jeffrey A.	7/21/86	AO	7/16/89
		Shift Engineer	To Present
Smith, Gregory E.	6/12/89	AO	To Present
Smith, Stephen R.	2/4/85	AO	4/7/86
		I&C Technician	To Present
Snyder, Alan V.	12/30/87	Utility Person	To Present
St. Pierre Sr., Robert S.	2/17/80	Assistant Plant Mechanic	6/18/81
		Plant Mechanic	6/18/88
		Sr. Plant Mechanic	To Present
Strysko, Edward C.	1/11/88	Assistant Plant Mechanic	9/11/88
		Plant Mechanic	To Present
Taintor Jr., Edward J.	10/14/86	Co-Op	12/3/87
		QA Coordinator	To Present

Taylor, Douglas A.	8/31/70	Assistant Plant Mechanic	3/1/72
		Plant Mechanic	9/14/78
		Lead Plant Mechanic	8/16/81
		Assistant Foreman	8/1/85
		Maintenance Engineer	To Present
Tessier, Michael A.	6/17/85	Co-op	8/1/88
		Engineer	To Present
Tietze, Brian J.	8/2/82	Building Supervisor	9/16/85
		Assistant Foreman	To Present
Turner, James A.	11/4/85	Assistant Plant Mechanic	7/4/86
		Plant Mechanic	To Present
Vekasy, Stephen A.	6/1/77	Technical Assistant	3/23/80
		Eng. Sup/Mech.	9/21/81
		Sr. Sup. Engineer	5/18/84
		Recirc Pipe Asst. to Program Manager	10/16/86
		Engineer	To Present
Vertanen, Dennis W.	5/27/86	Tool Room Attendant	To Present
Wamser, Christopher J.	7/14/86	AO	3/19/90
		ACRO	To Present
Ward, Joseph K.	1/8/90	Cont. Instr. Spec	To Present
Wender IV, Samual A.	8/28/82	I&C Technician	3/10/85
		Engineering Assistant	To Present
Williams, John M.	5/19/86	Utility Person	To Present
Wright, Lawrence E.	3/25/74	Utility Man	7/28/74
		Assistant Plant Mechanic	1/28/76
		Plant Mechanic	10/15/86
		Sr. Plant Mechanic	To Present
Yeaw, Merrill R.	8/20/73	Utility Man	1/28/74
		Assistant Plant Mechanic	7/28/75
		Plant Mechanic	8/27/85
		Lead Plant Mechanic	To Present
Ziguloski, Joseph M.	2/1/88	Assistant Plant Mechanic	10/1/88
		Plant Mechanic	To Present

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ATTACHMENT 5-1

OPERATORS

NAME	EMPLOY DATE	POSITIONS HELD	DATE PROMOTED
Aprea, Stephen P.	3/19/84	AO	7/21/86
		ACRO	To Present
Bowman Jr., Eugene V.	9/2/80	AO	8/9/82
		ACRO	11/16/86
		SCRO	
Branch, Richard L.	9/23/68	Shift Supervisor	3/1/76
		Assistant Ops Supervisor	8/1/81
		Ops Supervisor	7/16/83
		Assistant Ops Supervisor	11/16/84
		Asst. to Ops Supervisor	2/12/90
		INPO Loaned Employee	To Present
Bronson, Kevin H.	10/21/81	AO	9/11/83
		ACRO	6/21/87
		SCRO	To Present
Burns, Robert E.	7/2/79	AO	6/1/81
		ACRO	5/15/83
		CRO	To Present
Cantrell, Lonnie J.	8/27/73	AO	11/20/77
		ACRO	6/15/80
		CRO	12/31/81
		SCRO	3/22/87
		Ops. Training Inst.	5/8/88
		Shift Supervisor	To Present
Cavanaugh, David A.	7/30/79	AO	6/1/81
		ACRO	8/3/86
		CRO	To Present
Desilets, John J.	7/28/70	AO	5/1/72
		ACRO	5/13/73
		CRO	10/17/76
		SCRO	12/6/80
		Shift Supervisor	6/1/83
		Sr. Engineer	7/16/83
		Ops. Supervisor	8/16/85
		Shift Supervisor	To Present
Devercelly, Richard W.	2/6/84	Asst. Training Inst.	3/6/85
		Instructor	6/1/86
		Simulator Instructor	2/1/88
		SCRO	To Present

Doane, Lawrence E.	3/26/73	AO	11/20/77
		ACRO	5/11/80
		CRO	12/31/81
		SCRO	6/16/87
		Shift Supervisor	5/16/89
		Asst. Ops. Supervisor	To Present
Durborow, Jeffrey W.	6/30/71	AO	10/3/76
		ACRO	10/7/77
		CRO	9/29/85
		Ops. Engineer	To Present
Faupel, Robert F.	11/15/76	AO	4/13/80
		ACRO	8-29-82
		CRO	8/3/86
		SCRO	To Present
Favreau, Douglas P.	1/18/82	AO	6/10/84
		ACRO	To Present
Harris, Michael D.	2/25/85	AO	7/21/86
		ACRO	To Present
Herron, John T.	1/29/79	AO	4/13/80
		ACRO	12/13/81
		CRO	8/29/82
		SCRO	11/30/84
		Shift Supervisor	4/20/87
		Tech. Program Manager	1/1/89
		Operations Supervisor	To Present
Hibay, Michael J.	11/28/83	AO	7/21/86
		ACRO	To Present
Keith, Ronald M.	2/22/79	AO	6/1/81
		ACRO	12/26/82
		CRO	11/25/84
		SCRO	3/7/88
		Project Engineer	6/5/89
		SCRO	To Present
King, Wayne	12/17/79	AO	6/1/81
		ACRO	7/3/83
		CRO	6/21/87
		SCRO	To Present
LaPorte, Michael G.	12/14/77	AO	4/13/80
		ACRO	9/29/85
		CRO	To Present

Lawrence, Bruce E.	3/18/85	AO	7/21/86
		ACRO	To Present
Lindquist, William A.	2/6/70	AO	6/1/70
		CRO	11/11/73
		SCRO	8/1/81
		Shift Supervisor	To Present
Livingston, James D.	11/3/80	AO	8/2/82
		ACRO	7/8/87
		CRO	To Present
Metcalf, Barry W.	2/9/70	AO	6/1/70
		CRO	3/1/73
		SCRO	3/29/74
		Shift Supervisor	8/1/81
		Asst. Ops. Supervisor	7/16/83
		Shift Supervisor	To Present
Mulligan, Michael J.	9/29/80	AO	8/2/82
		ACRO	To Present
Oliver, Kenneth R.	1/4/82	AO	6/10/84
		ACRO	To Present
Paul, William F.	1/3/84	AO	7/21/86
		ACRO	To Present
Pichette, Brian R.	12/13/78	AO	4/13/80
		ACRO	5/5/81
		CRO	12/2/84
		SCRO	To Present
Pittman Jr., William M	2/7/79	AO	4/13/80
		ACRO	12/13/81
		CRO	6/12/83
		SCRO	5/16/89
		Acting Shift Supervisor	To Present
Schulze, William H.	1/21/80	AO	6/1/81
		ACRO	12/2/84
		CRO	8/7/89
		SCRO	To Present
St.Sauveur, Mark R.	7/7/80	AO	6/1/81
		ACRO	12/4/84
		CRO	To Present

Sutton, Harry S.	3/14/73	AO	10/3/76
		ACRO	1/28/79
		CRO	5/1/83
		SCRO	11/25/84
		Shift Supervisor	To Present
Swanson, Roger B.	11/9/81	AO	9/11/83
		ACRO	8/27/89
		CRO	To Present

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ATTACHMENT 8-1

LIST PROVIDED IN RESPONSE TO INTERROGATORY #8

QUALITY ASSURANCE COORDINATOR REVIEW

NAME	EMPLOY DATE	POSITIONS HELD	DATE PROMOTED
Amidon, Douglas	9/23/85	Co-Op	1/23/89
		Shift Engineer	To Present
Burger, Fred	4/23/73	Engineering Assistant	3/1/75
		Technical Assistant	7/1/87
		Receipt Insp. Supervisor	To Present
Ghilani, Michael R.	11/27/89	Shift Engineer	To Present
Gibson, John J.	1/25/88	Shift Engineer	To Present
Girroir, Dennis C.	7/1/77	Engineering Assistant	9/19/83
		Sr. QA Engineer	To Present
Jordan, Timothy W.	10/31/88	Shift Engineer	To Present
Meyer, Jeffrey T.	7/6/82	Shift Engineer	To Present
Metell, H. Michael	2/4/80	Technical Assistant	9/21/81
		Sr. Mechanical Engineer	4/16/86
		Engr. Support Supervisor	2/19/90
		Principal Engineer	To Present
Pagodin, Richard D.	12/10/79	Technical Assistant	9/21/81
		Sr. Electrical Engineer	8/25/82
		Engineering Support Supv.	3/16/86
		Plant Services Super.	1/6/87
		Tech. Services Super.	To Present
Palionis, Mark E.	6/14/82	Nuclear Safety Engineer	3/6/83
		Shift Engineer	1/1/89
		Sr. Operations Engineer	To Present
Taintor Jr., Edward J.	10/14/86	Co-Op	12/3/87
		QA Coordinator	To Present
Trask, Timothy E.	5/27/80	Co-Op	6/20/83
		Assoc. Engineer	6/1/85
		Mechanical Engineer	6/1/88
		Shift Engineer	To Present

ENGINEERING SUPPORT SUPERVISOR (ESS) REVIEW

NAME	EMPLOY DATE	POSITIONS HELD	DATE PROMOTED
Cappuccio, Gary	11/3/80	Mechanical Engineer	5/1/86
		Sr. Mechanical Engineer	To Present
Girroir, Dennis C.	7/1/77	Engineering Assistant	9/19/83
		QA Engineer	To Present
Metell, H. Michael	2/4/80	Technical Assistant	9/21/81
		Sr. Mechanical Engineer	4/16/86
		Engr. Support Supervisor	2/19/90
		Principal Engineer	To Present
Pagodin, Richard D.	12/10/79	Technical Assistant	9/21/81
		Sr. Electrical Engineer	8/25/82
		Engineering Support Supv.	3/16/86
		Plant Services Super.	1/6/87
		Tech. Services Super.	To Present
Phillips, David L.	7/14/80	Electrical Engineer	4/27/81
		TA/I&C	11/1/82
		Sr. Electrical Engineer	To Present

SHIFT SUPERVISOR REVIEW

NAME	EMPLOY DATE	POSITIONS HELD	DATE PROMOTED
Cantrell, Lonnie J.	8/27/73	AO	11/20/77
		ACRO	6/15/80
		CRO	12/31/81
		SCRO	3/22/87
		Ops. Training Inst.	5/8/88
		Shift Supervisor	To Present
Desilets, John J.	7/28/70	AO	5/1/72
		ACRO	5/13/73
		CRO	10/17/76
		SCRO	12/6/80
		Shift Supervisor	6/1/83
		Sr. Engineer	7/16/83
		Ops. Supervisor	8/16/85
		Shift Supervisor	To Present
Doane, Lawrence E.	3/26/73	AO	11/20/77
		ACRO	5/11/80
		CRO	12/31/81
		SCRO	6/16/87
		Shift Supervisor	5/16/89
		Asst. Ops. Supervisor	To Present
LeClair, Gary J.	11/19/70	AO	3/29/74
		ACRO	11/21/76
		CRO	9/26/80
		SCRO	5/16/83
		Shift Supervisor	11/16/84
		Asst. Ops. Supervisor	5/2/88
		Ops. Instructor	4/16/89
		Ops. Training Instructor	To Present
Lindquist, William A.	2/6/70	AO	6/1/70
		CRO	11/11/73
		SCRO	8/1/81
		Shift Supervisor	To Present
Metcalf, Barry W.	2/9/70	AO	6/1/70
		CRO	3/1/73
		SCRO	3/29/74
		Shift Supervisor	8/1/81
		Asst. Ops. Supervisor	7/16/83
		Shift Supervisor	To Present

Pittman Jr., William M.	2/7/79	AO	4/13/80
		ACRO	12/13/81
		CRO	6/12/83
		SCRO	5/16/89
		Acting Shift Supervisor	To Present
Porter, Dean C.	11/16/70	AO	3/29/74
		ACRO	10/24/76
		CRO	6/15/80
		SCRO	5/16/83
		Shift Supervisor	5/1/89
		Technical Program Manager	To Present
Sutton, Harry S.	3/14/73	AO	10/3/76
		ACRO	1/28/79
		CRO	5/1/83
		SCRO	11/25/84
		Shift Supervisor	To Present

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ATTACHMENT 14-1

POLICIES RELIED UPON BY THE MAINTENANCE PROGRAM

VYP100	Policy Administration
VYP105	Medical and Safety Program
VYP107	Radiation Protection Policy
VYP110	Staff Training Policy
VYP130	Corporate Oversight Policy
VYP131	Policy for Implementing the BWR Owner's Group Water Chemistry
VYP200	Hiring Policy
VYP201	Hiring Policy
VYP211	Drug and Alcohol Policy
VYP216	Policy for Performance Planning and Review
VYP217	Performance Planning and Review Procedure
VYP222	Fitness for Duty Program
VYP318	Contracts Administration Procedure
VYP319	Vendor Analysis Procedure
VYP320	Procurement Policy
VYP321	Request for Quotation/Bid Evaluation Procedure
VYP322	Purchase Order Processing Procedure
VYP325	Procedure for Disposition of Discrepant Material Upon Receipt
VYP326	MSPR Initiation Procedure
VYP340	Budget/Planning Policy
VYP350	Internal Audit Policy and Statement of Responsibility
VYP327	Procurement Engineering Administrative Procedure
VYP328	Technical Evaluation Procedure
VYP329	Equivalency Evaluation Procedure
VYP330	Commercial Grade Dedication Procedure
VYP331	Procurement Quality Assurance Procedure
VYP332	Inventory Procurement Procedure

ATTACHMENT 14-1 (Con't): PROCEDURES

PROCEDURE NUMBER	REV. #	TITLE	ISSUE DATE REVIEW DATE
AP 0010	21	OCCURRENCE REPORTS/NOTIFICATIONS AND REPORTS [illegible]	[illegible]
AP 0011	9	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]
AP 0013	2	[illegible]	[illegible]
AP 0014	1	[illegible]	[illegible]
AP 0015	4	[illegible]	[illegible]
AP 0016	12	CONTROL OF TEMPORARY MODIFICATIONS	12/21/1990 04/28/1992
AP 0021	14	MAINTENANCE REQUESTS	12/22/1992 10/07/1993
AP 0022	7	[illegible]	[illegible]
AP 0023	4	[illegible]	[illegible]
DP 0027	8	NUCLEAR NETWORK	08/27/1987 08/27/1991
AP 0028	12	OPERATING EXPERIENCE REVIEW AND ASSESSMENT COMMITMENT TRACKING	03/15/1990 04/22/1991 08/19/1991
AP 0030	13	THE PLANT OPERATIONS REVIEW COMMITTEE	04/21/1993 04/21/1994
DP 0031	1	NUCLEAR PLANT RELIABILITY DATA SYSTEM (NPRDS)	02/17/1988 04/17/1991 01/17/1992
DP 0045	2	IDENTIFICATION/CONTROL OF SAFETY CLASS OR SAFETY RELATED MATERIALS/PARTS/	02/25/1989 02/04/1991
AP 0135	1	PLANT EQUIPMENT CONTROL	06/27/1988 10/20/1992
AP 0140	10	VERMONT YANKEE LOCAL CONTROL SWITCHING RULES	05/02/1991 05/02/1991
AP 0145	5	EQUIPMENT CYCLE RECORD KEEPING	04/28/1991

PROCEDURE NUMBER	REV #	TITLE	ISSUE DATE REVIEW DATE
AP 0150	26	RESPON[illegible]S AUTHORI[illegible] OF OPERA[illegible] DEPARTMENT PERSONNEL	02/21/1989 [illegible]
[illegible]	[illegible]	[illegible]	[illegible] [illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible] INSTRUMENTATION AND CONTROL [illegible] LIGHTS	[illegible]
AP 0159	[illegible]	RECORDS [illegible] FILING, STORAGE, RETRIEVABILITY	[illegible]/12/1989 [illegible]/12/1991
DP 0160	1	CONTROL OF OPERATIONS DEPARTMENT MEASURING AND TEST EQUIPMENT	08/25/1990
AP 0164	1	OPERATIONS DEPARTMENT INSERVICE TESTING	05/26/1989 01/14/1991
AP 0200	11	MAINTENANCE PROGRAM	07/01/19[illegible] 07/[illegible]
AP 0201	9	CONTROL OF MAINTENANCE DEPARTMENT MEASURING TEST EQUIPMENT	06/30/1989 02/09/19[illegible]
DP 0202	8	VIBRATION MEASUREMENTS OF ROTATING EQUIPMENT	08/29/1989 08/29/1991
AP 0205	2	USE OF LIFTING EQUIPMENT OVER SAFE SHUTDOWN EQUIPMENT	06/30/1989 06/30/1991
AP 0206	1	INSERVICE TESTING VIBRATION MEASUREMENTS	03/15/1990 01/14/1991
AP 0300	10	EQUIPMENT HISTORY CARD FILE	02/27/1989 02/27/1991
DP 0301	12	CALIBRATION AND CONTROL OF MEASURING AND TEST EQUIPMENT (M TE	06/27/1989 06/27/1991
DP 0302	10	CALIBRATION OF I C DEPARTMENT TEST EQUIPMENT	01/25/1989 01/25/1991
AP 0305	5	I/C DEPARTMENT ENVIRONMENTAL QUALIFICATION (EQ) MAINTENANCE AND SURVEILLANCE (M/S) PROGRAM	04/11/1990 06/30/1991
AP 0310	5	SURVEILLANCE, PREVENTATIVE AND CORRECTIVE MAINTENANCE PROGRAM	05/04/1990
AP 0312	0	EQUIPMENT TECHNICAL INFORMATION	12/29/1989

PROCEDURE NUMBER	REV. #	TITLE	ISSUE DATE REVIEW DATE
DP 0313		EQUIPMENT SERVICE LIFE TRACKING	
AP [illegible]		[illegible]	
[illegible]		[illegible]	[illegible] [illegible]
AP [illegible]	[illegible]	[illegible]	[illegible] [illegible]
AP [illegible]	1[illegible]	[illegible] PROTECTION	[illegible] [illegible]
AP [illegible]	14	PERSONNEL MONITORING	[illegible] [illegible]
AP [illegible]	1	WORK [illegible] ASBESTOS	[illegible]/1990 [illegible]/1992
AP 051[illegible]	[illegible]	WORKING IN CONFINED SPACES	10/20/1989 10/20/1990
AP 051[illegible]	2	WORK IN HOT ENVIRONMENTS	05/23/1990 05/23/1992
AP 0510	2	RADIATION PROTECTION REQUIREMENTS FOR THE DRYWELL WHEN REACTOR IS SHUTDOWN	[illegible]/1990 11/22/1990
AP [illegible]	4	HEALTH PHYSICS INCIDENT REPORTS	12/07/1990 [illegible]/13/1991
AP 053[illegible]	[illegible]	ALARA IMPLEMENTATION FOR DESIGN CHANGES AND WORK ANALYSIS	04/28/1989 04/28/1991
DP 0540	3	RADIATION PROTECTION DEPARTMENT SURVEILLANCE SCHEDULING	02/05/1991 01/13/1991
AP 0620	7	CHEMICAL MATERIAL CONTROL	11/22/1989 11/22/1991
DP 0625	1	CHEMICAL CLEANING OF THE TBCCW HEAT EXCHANGERS	05/17/1989 05/17/1991
AP 0700	6	VERMONT YANKEE STAFF TRAINING	04/11/1990 04/11/1992
AP 0711	2	LICENSED OPERATOR CONTINUING TRAINING	04/25/1988 04/25/1990
AP 0715	8	NON-LICENSED OPERATOR TRAINING	12/10/1987 12/10/1989
AP 0723	3	TRAINING FOR UNESCORTED ACCESS	11/19/1987 11/19/1989
AP 0801	18	RECEIVING AND SHIPMENT OF MATERIAL	12/18/1989

PROCEDURE NUMBER	REV #	TITLE	ISSUE DATE REVIEW DATE
AP 0803	11	STORAGE OF MATERIALS AND EQUIPMENT	02/23/1989 02/23/1991
AP 080[illegible]	8	ISSUING [illegible] OF [illegible] PARTS AND COMPONENTS	[illegible] [illegible]
[illegible]	[illegible]	[illegible]	[illegible] [illegible]
[illegible]	[illegible]	[illegible]	[illegible] [illegible]
[illegible]	[illegible]	[illegible]	[illegible] [illegible]
DP [illegible]	[illegible]	MEDICAL [illegible]	[illegible] [illegible]
DP 08[illegible]	[illegible]	[illegible] EXAMINATIONS	03/15/1991 03/15/1992
DP 08[illegible]	[illegible]	CONTRACTOR DRUG SCREENING	05/04/1990
OP 1111	15	CONTROL ROD REMOVAL AND INSTALLATION	02/17/1989 02/17/1991
OP 11[illegible]	8	PREPARATION OF THE REACTOR VESSEL FOR NOZZLE SPARGER INSPECTIONS OR REPAIRS	02/09/1989 02/09/1991
OP 120[illegible]	15	PREPARATION OF THE REACTOR VESSEL FOR REFUELING	07/21/1989 02/03/1991
OP 12[illegible]	14	ASSEMBLY OF THE REACTOR DRYWELL SYSTEMS	07/21/1989 02/03/1991
OP 1400	18	FUEL RECEIPT AND PRELIMINARY HANDLING	04/25/1990 04/25/1992
OP 1401	17	NEW FUEL INSPECTION AND CHANNELING	05/10/1990 05/10/1992
OP 1402	11	CHANNEL INSPECTION	09/29/1989 09/29/1991
OP 1403	10	FUEL BUNDLE NON-DESTRUCTIVE TESTING RECONST	05/30/1990 05/30/1992
OP 1404	1	RECEIPT INSPECTION OF CONTROL ROD BLADES	03/28/1990 03/28/1992
OP 1408	9	LPRM REMOVAL AND REPLACEMENT	02/09/1991
OP 1410	16	FUEL LOADING	12/08/1989 12/08/1991
OP 1411	10	CORE VERIFICATION	02/27/1990 02/27/1992

PROCEDURE NUMBER	REV #	TITLE	ISSUE DATE / REVIEW DATE
OP 1412	8	JET PUMP VISUAL EXAMINATION	03/28/1990 01/28/1992
OP 1413	3	VISUAL EXAMINATION OF MISCELLANEOUS INTERNAL REACTOR VESSEL BRACKETS	[illegible] [illegible] 14 1991
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
OP 1416	[illegible]	[illegible]	[illegible]
OP 1419	3	VISUAL EXAMINATION OF REACTOR COMPONENTS BELOW THE CORE PLATE	[illegible] 21 [illegible] 08 21 1991
AP 4000	10	SURVEILLANCE TESTING CONTROL	01/17/1990 07/20/1990
OP 4001		PLANT FIRE EXTINGUISHER SURVEILLANCE	
OP 4002		INTEGRITY SURVEILLANCE OF FIRE DETECTOR AND SPRINKLER SYSTEMS	
OP 4019	1	SURVEILLANCE OF VITAL FIRE BARRIERS	[illegible] 04/[illegible]/1991
OP 4020	17	SURVEILLANCE OF FIRE PROTECTION EQUIPMENT	02/10/1991
OP 4025	8	INSERVICE INSPECTION	01/11/1990 01/11/1992
OP 4026	2	PRESSURE BOUNDARY REPAIR PROCEDURE	04/04/1990 04/04/1992
OP 4028	5	ADS AIR SUPPLY ACCUMULATOR SURVEILLANCE	01/25/1989 01/25/1991
OP 4029	5	TYPE A - PRIMARY CONTAINMENT INTEGRATED LEAK RATE TESTING	03/15/1990 02/27/1991
OP 4030	16	TYPE B AND C PRIMARY CONTAINMENT LEAK RATE TESTING	08/12/1990
OP 4100	15	ECCS INTEGRATED AUTOMATIC INITIATION TEST	03/15/1990 03/15/1992
OP 4101	12	RPV OPERATIONAL HYDRO TEST	09/29/1989 09/29/1991
OP 4102	19	REFUEL OUTAGE/FUEL MOVEMENT PERIODIC TESTS	12/18/1989 08/29/1991
OP 4103		FIRE PROTECTION EQUIPMENT	

PROCEDURE NUMBER	REV #	TITLE	ISSUE DATE / REVIEW DATE
OP 4104		FIRE HOSE HYDRO TEST SURVEILLANCE	/
OP 4123		FIRE [illegible] SURVEILLANCE	
OP 4[illegible]		[illegible]	[illegible]
OP 4[illegible]	20	[illegible]	[illegible]
OP 4[illegible]		[illegible]	[illegible]
OP 4113	16	MAIN AND AUXILIARY STEAM SYSTEM SURVEILLANCE	04/01/1988 04/01/1991
OP 4114	22	STANDBY LIQUID CONTROL SYSTEM SURVEILLANCE	12/29/1988 12/29/1991
OP 4115	23	PRIMARY CONTAINMENT SURVEILLANCE	11/15/1988 04/06/1990
OP 4116	11	SECONDARY CONTAINMENT SURVEILLANCE	01/14/1988 04/29/1991
OP 4117	13	STANDBY GAS TREATMENT SYSTEM SURVEILLANCE	05/13/1990
OP 4120	21	HIGH PRESSURE COOLANT INJECTION SYSTEM SURVEILLANCE	01/22/1988 10/03/1991
OP 4121	29	REACTOR CORE ISOLATION COOLING SYSTEM SURVEILLANCE	03/01/1991 03/01/1991
OP 4122	10	AUTO BLOWDOWN SYSTEM SURVEILLANCE	12/19/1988 09/27/1991
OP 4123	19	CORE SPRAY SYSTEM SURVEILLANCE	12/27/1988 02/27/1991
OP 4124	26	RESIDUAL HEAT REMOVAL AND RHR SERVICE WATER SYSTEM SURVEILLANCE	03/15/1991 10/25/1991
OP 4125	8	CONTAINMENT ATMOSPHERE DILUTION SYSTEM SURVEILLANCE	01/14/1988 04/06/1990
OP 4126	23	DIESEL GENERATORS SURVEILLANCE	11/16/1988 04/29/1990
OP 412"	4	JOHN DEERE DIESEL GENERATOR SURVEILLANCE	11/16/1988 11/16/1991
OP 4140	10	IN-SERVICE TESTING FOR THE PRIMARY AND SECONDARY LINE CARRIER AND MICROWAVE/ LINE CARRIER TRANSFER TRIP SYSTEM	02/05/1990 07/14/1991
OP 4142	1	VERNON TIE SURVEILLANCE	07/28/1988 07/28/1991

PROCEDURE NUMBER	REV #	TITLE	ISSUE DATE REVIEW DATE
OP 4144	12	120/240 VAC VITAL MG SET SURVEILLANCE	09/06/1988 12/06/1990
OP 4170	12	OFF-GAS RECOMBINER SYSTEM SURVEILLANCE	06/21/1989 07/20/1991
OP 4183	11	[illegible]	[illegible]
OP 4187	2	[illegible]	[illegible]
OP 4188	10	[illegible]	[illegible]
RP 4121	12	REMOVAL OF MAIN SEAL OIL SYSTEM SURVEILLANCE	05/25/1989 05/25/1991
RP 4141	11	STATOR COOLING WATER SYSTEM SURVEILLANCE	12/29/1989 12/29/1991
OP 4171	15	FEEDWATER SYSTEM SURVEILLANCE	06/12/1989 09/06/1990
OP 4181	15	SERVICE WATER ALTERNATE COOLING SYSTEM SURVEILLANCE	01/17/1990 01/17/1992
OP 4182	17	REACTOR BUILDING CLOSED COOLING WATER SYSTEM SURVEILLANCE	02/27/1990 02/27/1992
RP 4183	12	TURBINE BUILDING CLOSED COOLING WATER SURVEILLANCE	07/28/1989 07/28/1991
OP 4190	12	SERVICE AND INSTRUMENT AIR SYSTEM SURVEILLANCE	10/25/1988 10/25/1991
OP 4191	1	HVAC SURVEILLANCE	02/09/1990 10/11/1991
RP 4194	12	PLANT HEATING BOILER SURVEILLANCE	08/21/1989 08/21/1991
OP 4195	14	FUEL OIL TRANSFER SYSTEM SURVEILLANCE	02/07/1990 02/17/1992
OP 4196	2	CST LEAK MONITORING PROGRAM	09/06/1988 09/06/1990
OP 4200	10	MAIN STEAM RELIEF VALVE REMOVAL, INSTALLATION, TESTING	11/02/1988 11/03/1990
OP 4201	10	REMOVAL, INSTALLATION AND TESTING OF MAIN STEAM SAFETY VALVES	07/21/1989 07/21/1991
OP 4202	10	PRIMARY CONTAINMENT VACUUM BREAKER INSPECTION AND TESTING	02/09/1989 02/09/1991
OP 4203	9	MAINTENANCE AND TESTING OF ELC SQUIB VALVES	/ / 06/06/1990

PROCEDURE NUMBER	REV #	TITLE	ISSUE DATE/ REVIEW DATE
OP 4304	6	CALIBRATION OF DIESEL GENERATOR METERS	03/15/1990 07/19/1992
OP 4309	8	CALIBRATION OF THE CLASS IE SAFETY-RELATED [illegible]	[illegible]
OP [illegible]	[illegible]	[illegible]	[illegible]
OP [illegible]	[illegible]	[illegible]	[illegible]
OP 4315	6	TEST AND CALIBRATION OF REACTOR [illegible]	[illegible]
OP 4319	7	UPS BATTERY PERFORMANCE TEST	08/15/1988 12/09/1990
OP 4317	10	MAINTENANCE AND SURVEILLANCE OF LEAD ACID STORAGE BATTERIES	06/30/1988 06/30/1991
OP 4211	13	MAIN STATION BATTERY PERFORMANCE TEST	03/28/1990 03/28/1992
OP 4212	2	24 VOLT ECCS BATTERY PERFORMANCE TEST	/ / 06/17/1992
OP 4213	9	125 VOLT 4KA BATTERY PERFORMANCE TEST	01/13/1988 01/13/1991
OP 4214	8	CORE SPRAY AND LPCI AUXILIARY POWER MONITOR CALIBRATION	09/23/1991 09/23/1992
OP 4215	0	MAIN STATION BATTERY SERVICE TEST BATTERY A OR B	06/30/1988 06/30/1991
OP 4216	6	MAIN STEAM SAFETY RELIEF VALVE DISCHARGE LINE (SRVDL) VACUUM BREAKER TESTING	03/15/1990 03/15/1992
OP 4217	2	ALTERNATE SHUTDOWN BATTERY AS-2 SERVICE TEST	01/13/1988 01/13/1991
OP 4218	0	CALIBRATION OF THE 4KV BUS GROUND OVERCURRENT RELAYS	01/25/1988 01/25/1991
OP 4219	1	UPS BATTERY SERVICE TEST	07/21/1988 03/06/1991
OP 4221		SURVEILLANCE OF FIRE EXTINGUISHING SYSTEMS	/ / / /
OP 4245	2	CAL. OF CLASS IE SAFETY RELATED RELAYS (IAV54) UNDERVOLTAGE RELAYS (27/3C 27/3D, BUS 3)(27/4C, 27/4D, BUS 4)	09/28/19[illegible] 09/29/19[illegible]
OP 4246	2	CALIBRATION OF DIESEL GENERATOR RELAYS (CFVB) VOLTAGE BALANCE RELAYS 60-D6A AND 60-D6B	02/10/1988 02/10/1991
OP 4247	2	CALIBRATION OF CLASS IE SAFETY RELATED RELAYS (IAC) OVERCURRENT RELAYS	05/17/1988 05/17/1991

PROCEDURE NUMBER	REV #	TITLE	ISSUE DATE REVIEW DATE
OP 4248	2	CALIBRATIONS OF CLASS IE SAFETY RELATED RELAYS [illegible] NORMAL GROUND RELAYS	02/27/1989 02/27/1991
OP 4249	2	CALIBRATION OF DIESEL GENERATOR [illegible] OVERCURRENT RELAYS [illegible] 51/DGB	06/30/1989 06/30/1991
OP [illegible]	[illegible]	[illegible] DIESEL GENERATOR [illegible] OVERCURRENT RELAYS [illegible]	[illegible]
OP [illegible]	[illegible]	CALIBRATION OF CLASS IE SAFETY RELATED RELAYS [illegible] GENERATOR [illegible]	[illegible]
OP [illegible]	[illegible]	CALIBRATION OF CLASS IE SAFETY RELATED RELAYS [illegible] LOSS OF FIELD RELAY [illegible]	[illegible]
OP 4253	[illegible]	CALIBRATION OF CLASS IE SAFETY RELATED RELAYS (CARR-1) DIRECTIONAL POWER RELAY - RELAY 32 DGA/B	02/27/1989 02/27/1991
OP 4254	1	CALIBRATION OF CLASS IE SAFETY RELATED RELAYS (OVE-1) SYNCHRO VERIFIER RELAY (25/DGA 25/DGB)	06/21/1989 06/21/1991
OP 4255	2	CAL. OF CLASS IE SAFETY RELATED RELAYS ASEA RXEDZ BUS UNDERVOL. RELAY (27 3I, 27/3W F/4KV BUS 3) (27/4I 27/4W BUS 4)	05/23/1990 05/23/1991
OP 4256	2	CALIBRATION OF CLASS IE SAFETY RELATED RELAYS ASEA RXKE1 TIMING RELAYS	04/25/1990
OP 4257	1	CALIBRATION OF DIESEL GENERATOR WESTINGHOUSE TPE SV OVERVOLTAGE RELAYS (59-1 DGA AND 59-1/DGB)	08/09/1989 08/09/1991
OP 4258	1	CALIBRATION OF DIESEL GENERATOR RELAYS GE TYPE PJV OVERVOLTAGE RELAYS (59/DGA AND 59/DGB)	02/14/1989 02/14/1991
OP 4259	1	CALIBRATION OF VITAL MG AUTO TRANSFER VOLTAGE AND FREQUENCY RELAYS	06/17/1990
OP 4300	8	SRM FUNCTIONAL/CALIBRATION PROCEDURE	01/05/1989 01/05/1991
OP 4301	10	IRM FUNCTIONAL/CALIBRATION	08/21/1989 08/21/1991
OP 4302	10	APRM FUNCTIONAL	01/25/1989 01/25/1991
OP 4303	5	TRANSIENT REACTOR LEVEL MEASUREMENT CALIBRATION PROCEDURE	01/13/1989 01/13/1991
OP 4304	16	ROD BLOCK MONITOR FUNCTIONAL/CALIBRATION TEST	03/15/1990 03/15/1992
OP 4305	15	RCIRC LOOP FLOW TRANSMITTER CALIBRATION	04/11/1990 04/11/1992
OP 4306	16	CONTROL ROD BLOCK SYSTEM LOGIC TEST	01/11/1990 01/11/1992

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OP 4307	3	SRV POSITION INDICATION SYSTEM FUNCTION AND CALIBRATION	12/02/1989 12/02/199[illegible]
OP 4308	8	AVERAGE POWER RANGE MONITOR CALIBRATION	0[illegible]/27/1989 01/25/199[illegible]
OP 43[illegible]	[illegible]	[illegible] RANGE LEVEL MEASUREMENT LOOP [illegible]	[illegible]
OP 431[illegible]	[illegible]	[illegible] INSTRUMENT VOLUME [illegible] WATER [illegible] CALIBRATION	[illegible]
OP 431[illegible]	1[illegible]	DRYWELL HIGH PRESSURE SCRAM ISOLATION FUNCTIONAL CALIBRATION	[illegible]
OP 4312	16	REACTOR VESSEL HIGH PRESSURE SCRAM FUNCTION TEST AND CALIBRATION	01/17/1990 01/16/199[illegible]
OP 4313	20	REACTOR WATER LO LEVEL SCRAM - ISOL LO LO LEVEL ISOLATION FUNCTIONAL/ CALIBRATION	01/17/1990 11/16/1990
OP 4314	10	GENERATOR LOAD REJECT - TURBINE CONTROL VALVE FAST CLOSURE SCRAM FUNCTION/ CALIBRATION	01/05/1989 01/15/1991
OP 4315	16	MAIN STEAM LINE RADIATION MONITOR SCRAM - ISOLATION FUNCTIONAL CALIBRATION TEST	02/14/1990 02/16/199[illegible]
OP 4316	11	REACTOR MANUAL SCRAM FUNCTIONAL TEST	03/21/1989 03/21/1991
OP 4317	12	SCRAM TEST SWITCH FUNCTIONAL TEST	01/13/1989 01/13/1991
OP 4318	11	REACTOR MODE SWITCH IN SHUTDOWN FUNCTION TEST	01/25/1989 01/25/1991
OP 4319	13	RPS - FIRST STAGE TURBINE PRESSURE FUNCTION/CALIBRATION	05/05/1989 01/05/1991
OP 4320	10	REACTOR PROTECTION SYSTEM RESPONSE TIME CHECK	02/27/1990 02/27/1992
OP 4321	8	INSTRUMENT VALVE LINEUP TAGGING/CONTROL	02/27/1989 11/16/1990
OP 4322	8	MAIN STEAM LINE AREA HIGH TEMPERATURE FUNCTION/CALIBRATION TEST	09/29/1988 09/29/1990
OP 4323	17	MAIN STEAM LINE HIGH FLOW FUNCTION/ CALIBRATION	11/15/1989 07/28/1991
OP 4324	16	MAIN STEAM LINE LOW PRESSURE FUNCTION/ CALIBRATION	02/10/1989 02/10/1991
OP 4325	14	CONDENSER LOW VACUUM ISOLATION FUNCTION TEST/CALIBRATION	08/29/1989 08/29/1991
OP 4326	12	REACTOR BUILDING VENTILATION/REFUELING	05/02/199[illegible]

PROCEDURE NUMBER	REV #	TITLE	ISSUE DATE/ REVIEW DATE
OP 4327	0	AIR EVACUATION SYSTEM SURVEILLANCE	03/31/1994 03/31/1994
OP 4328	8	[illegible] BREATHING AIR SYSTEM - FUNCTIONAL TEST	10/20/1988 04/25/1990
OP 43[illegible]	[illegible]	[illegible]	[illegible]
OP 43[illegible]	[illegible]	[illegible]	[illegible]
OP 4337	12	[illegible]	[illegible]
OP 4338	11	REACTOR BUILDING VENTILATION/SGTS SURE ITEM A AND B LOGIC TEST	05/29/1991
OP 4339	1	REACTOR BUILDING HIGH RANGE AREA RADIATION MONITOR FUNCTION	06/17/1987
OP 4334	11	AUTOMATIC INITIATION TEST OF MSIV VALVES	05/13/1990
OP 4336	11	REACTOR BUILDING VENTILATION/SGTS LOGIC POWER MONITOR FUNCTIONAL TEST	07/28/1988 07/28/1990
OP 4336	7	CONTAINMENT SPRAY LOW WATER LEVEL INTERLOCK	04/18/1990 07/28/1991
OP 4337	2R	REACTOR WATER LEVEL ECCS INITIATION - ISOLATION FUNCTIONAL/CALIBRATION	05/04/1990
OP 4338	15	DRYWELL HIGH PRESSURE ECCS FUNCTION/ CALIBRATION	01/11/1990 08/06/1991
OP 4340	19	REACTOR LOW PRESSURE ECCS VALVE PERMISSIVE FUNCTION/CALIBRATION	01/11/1990 01/05/1991
OP 4341	6	FUEL POOL LEVEL SWITCH CALIBRATION	07/28/1988 07/28/1991
OP 4342	9	REACTOR PRESSURE RPT/ARI/ECCS FUNCTION/ CALIBRATION	01/11/1990 11/16/1990
OP 4343	16	ADS SYSTEM LOGIC TEST	12/08/1988 01/13/1991
OP 4344	4	DRYWELL H2,O2 MONITOR FUNCTIONAL CALIBRATION	06/30/1989 06/30/1991
OP 4345	12	ADS POWER MONITOR FUNCTIONAL TEST	01/28/1988 01/28/1991
OP 4346	12	CORE SPRAY PUMP DISCHARGE PRESSURE FUNCTION/CALIBRATION	02/17/1988 02/17/1991
OP 4347	11	CORE SPRAY HEADER DIFFERENTIAL PRESSURE FUNCTION/CALIBRATION	05/05/1988 05/05/1991

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OP 4348	13	CORE SPRAY POWER MONITOR FUNCTIONAL	04/11/1990 01/28/1991
OP 4349	15	CORE SPRAY SUBSYSTEM A/B LOGIC TEST	[illegible] [illegible]
OP 43[illegible]	[illegible]	[illegible] [illegible] CALIBRATION	[illegible] [illegible]
OP 43[illegible]	[illegible]	[illegible] [illegible] [illegible] CALIBRATION	[illegible] [illegible]
OP 43[illegible]	[illegible]	[illegible] PRESSURE [illegible] CALIBRATION	[illegible] [illegible]
OP 4353	13	RHR [illegible] POWER MONITOR FUNCTIONAL TEST	[illegible]/28/1989 [illegible]/28/1991
OP 4354	18	RHR SUBSYSTEM A/B LOGIC TEST	10/03/1989 10/03/1991
OP 4355	7	RCIC [illegible] FUNCTIONAL CALIBRATION	12/19/1989 07/28/1991
OP 4356	13	HPCI STEAM LINE HIGH FLOW FUNCTION CALIBRATION	02/10/1989 02/10/1991
OP 4357	12	HIGH PRESSURE COOLANT INJECTION STEAM LINE LOW PRESSURE FUNCTIONAL/CALIBRATION	02/05/1990 07/28/1990
OP 4358	8	HPCI STEAM LINE/SPACE HIGH TEMPERATURE FUNCTION CALIBRATION	02/10/1989 02/10/1991
OP 4359	13	HPCI SYSTEM POWER MONITOR FUNCTIONAL TEST	01/13/1989 01/13/1991
OP 4360	16	HPCI SYSTEM LOGIC TEST	 03/31/1990
OP 4361	19	HPCI SYSTEM ISOLATION A/B LOGIC FUNCTIONAL/CALIBRATION TEST	02/27/1990 02/27/1992
OP 4362	6	RWCS BREAK DETECTION ISOLATION FUNCTION/CALIBRATION	01/17/1990 02/27/1991
OP 4363	16	HPCI SUCTION TRANSFER ON CONDENSATE STORAGE TANK (CST) LOW LEVEL FUNCTIONAL TEST/CST LEVEL INSTRUMENTATION CALIB	01/22/1990 01/22/1992
OP 4364	11	RCIC STEAM LINE HIGH FLOW FUNCTION/ CALIBRATION	07/28/1989 07/28/1991
OP 4365	13	RCIC STEAM LINE LOW PRESSURE FUNCTION/ CALIBRATION	04/18/1990 04/18/1991
OP 4366	9	RCIC STEAM LINE TUNNEL/SPACE HIGH TEMPERATURE FUNCTION/CALIBRTION TEST	04/25/1990 04/25/1992
OP 4367	11	RCIC SYSTEM POWER MONITOR FUNCTION TEST	01/13/1989 01/13/1991

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OP 4369	19	REACTOR CORE ISOLATION COOLING (RCIC) SYSTEM [illegible] ISOLATION LOGIC FUNCTIONAL CALIBRATION TEST	04/16/1990 [illegible]/1991
OP 43[illegible]	2	[illegible]	[illegible]/05/1989 [illegible]/05/1991
OP 43[illegible]	[illegible]	[illegible] CALIBRATION [illegible]	[illegible]
OP 437[illegible]	1[illegible]	[illegible] PRESSURE TRANSMITTER LOOP CALIBRATION	[illegible]
OP 437[illegible]	1[illegible]	[illegible] TEMPERATURE CALIBRATION	[illegible] 1991
OP 4373	14	TORUS WATER TEMPERATURE CALIBRATION	[illegible]/15/1990 03/15/1992
OP 4374	1[illegible]	TORUS NARROW RANGE WATER LEVEL TRANSMITTER LOOP CALIBRATION	06/17/1990
OP 4375	15	REACTOR PRESSURE CALIBRATION	11/22/1989 03/23/1991
OP 4376	13	TORUS-REACTOR BUILDING VACUUM BREAKER DIFFERENTIAL PRESSURE FUNC CALIBRATION	01/25/1989 01/25/1991
OP 4377	3	DRYWELL WIDE RANGE PRESSURE LOOP CALIBRATION	03/23/1989 03/23/1991
OP 4378	17	EXCESS FLOW CHECK VALVE FUNCTIONAL	07/20/1988 07/20/1990
OP 4379	3	DRYWELL/TORUS DIFFERENTIAL PRESSURE FUNC/CALIBRATION	07/28/1989 07/28/1991
OP 4380	8	FUNC/CALIBRATION OF HYDROGEN DETECTION SYSTEM	07/28/1989 07/28/1991
OP 4381	8	AOG RADIATION MONITORS FUNCTIONAL/CAL	02/05/1990 02/05/1992
OP 4382	15	STACK RADIATION MONITORING FUNCTIONAL/CALIBRATION	01/11/1990 01/11/1992
OP 4383	6	STACK/HI RANGE NOBLE GAS MONITOR FUNC/CALIBRATION	05/10/1990 05/10/1992
OP 4384	18	AREA RADIATION MONITORING SYSTEM FUNCTIONAL/OPERATING CYCLE TEST	04/25/1990 02/27/1991
OP 4385	14	LIQUID PROCESS RADIATION MONITORING SYSTEM FUNCTION/CALIBRATION	02/14/1990 02/14/1992
RP 4386	11	MAIN STEAM LINE RELIEF VALVE BELLOWS LEAKAGE CALIBRATION	12/02/1988 12/02/1990
OP 4387	16	AIR EJECTOR OFF GAS RADIATION MONITORING SYSTEM FUNCTIONAL/CALIBRATION	12/13/1989 07/14/1991

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OP 4389	2	CONTAINMENT SPRAY FLOW TRANSMITTER LOOP CALIBRATION	05/29/1990
OP 4390	11	RPS TRIP SYSTEM LOGIC [illegible] CALIB	[illegible]
OP 4391	[illegible]	[illegible] FLOW TRANSMITTER LOOP [illegible]	[illegible]
OP 4392		[illegible] OF WATER [illegible]	
OP 4393		[illegible]	
RP 4394	10	PROCESS TEMPERATURE MONITOR STEAM LEAK DETECTION SYSTEM FUNCTION CALIBRATION	07/28/1989 07/28/1991
OP 4395		CHECK OF COMPUTER HEATING VENTILATION AIR CONDITIONING (HVAC) SHUTDOWN CIRCUITS/COMPUTER ROOM HALON ACT[illegible]	
RP 4396	11	STRONG MOTION ACCELEROGRAPH FUNCTION TEST	05/10/1990 05/10/1992
RP 4397	10	LINEAR RADIATION MONITOR FUNC. CHECK	04/28/1989 04/28/1991
OP 4398	7	RPS SCRAM RESET DELAY FUNC. CALIB	07/28/1989 07/28/1991
RP 4399	5	REACTOR PRESSURE VESSEL (RPV) HEAD SEAL LEAK DETECTION FUNC/CALIB TEST	02/03/1989 02/03/1991
OP 43100	0	SAFETY VALVE POSITION INDICATION FUNCTIONAL/CALIBRATION TEST	03/15/1990 03/15/1992
OP 43101	0	SURVEILLANCE OF FIRE PROTECTION EQUIPMENT	04/10/1990 04/10/1992
OP 43102		RCIC SYSTEM ACTUATION LOGIC FUNCTIONAL/CALIBRATION TEST	
OP 43103		APRM FLOW CONVERTER AND POWER SUPPLY CALIBRATION	
OP 4400	12	CALIBRATION OF THE APRM SYSTEM TO CORE THERMAL POWER	01/28/1989 01/28/1991
OP 4401	17	CORE THERMAL HYDRAULIC LIMITS EVALUATION	02/10/1989 02/10/1991
OP 4403	13	CORE THERMAL LIMITS SURVEILLANCE USING 3D MONICORE MANUAL MONITOR	11/15/1988 11/15/1990
OP 4404	5	CONTROL BLADE LIFETIME MANAGEMENT	03/15/1989 03/15/1991
OP 4406	9	LPRM CALIBRATION AND FUNCTIONAL CHECK	12/29/1989 12/29/1991

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OP 4407	5	LPRM LIFETIME MANAGEMENT	04/04/1990 09/26/1991
OP 44[illegible]	5	RE BEGINNING OF [illegible] STARTUP TESTING	[illegible]/1989 12/[illegible]/1990
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
OP 44[illegible]	[illegible]	REACTIVITY ANOMALIES [illegible]	[illegible]
OP 44[illegible]	6	ROD WORTH MINIMIZER SURVEILLANCE	 09/06/1990
AP 4500	11	RADIOACTIVE SOURCE ACCOUNTABILITY, INVENTORY AND LEAK TESTING	05/26/1989 12/02/1990
OP 4501	2	FILTER TESTING	07/28/1989 08/19/1990
OP 4502	1	CONTROL OF RADIOLOGICAL SURVEY EQUIPMENT	02/07/1990 10/30/1991
OP 4503	0	SOURCE CALIBRATION OF REACTOR BUILDING VENTILATION AND REFUELING AREA ZONE RADITION MONITORS	09/[illegible]/1989 09/08/1991
OP 4505	0	SOURCE CALIBRATION OF MAIN STEAM LINE RADIATION MONITORS	09/08/1989 09/08/1991
OP 4506	0	OPER./SOURCE CAL. OF RX BLDG. VENT EXHAUST AIR, AOG BLDG. VENT. EXHAUST AIR AND CONT. AIR MONITORS	09/08/1989 09/08/1991
OP 4507	0	SOURCE CALIBRATION OF STEAM JET AIR EJECTOR OFF GAS MONITORS	09/08/1989 09/08/1991
OP 4508	0	CALIBRATION OF THE HNS AUTOMATED TOOL FRISKER (ATF)	06/27/1989 06/27/1991
OP 4509		CHANGE TO OP 4609 - 08/18/1987	/ /
OP 4510		CHANGED TO OP 4605 - 11/05/1987	/ / / /
OP 4512	4	CALIBRATION OF THE NMC MOBILE CONTINUOUS AIR MONITORS	/ / 03/16/1990
OP 4513	0	CALIBRATION OF HIGH RANGE STACK MONITOR	09/08/1989 09/08/1991
OP 4514	1	SAMPLING/ANALYSIS OF CONTAINMENT ENVIRONMENT	12/27/1989 09/08/1991
[illegible]	[illegible]	[illegible]	[illegible]

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DP 4521	3	SOURCE CALIBRATION OF CONTAINMENT HIGH RANGE RADIATION MONITOR	03/23/1989 03/23/1991
DP 4522	1	CALIBRATION OF THE REACTOR BUILDING RADIATION MONITOR SYSTEM [illegible]	02/09/1989 02/09/1991
DP 4524	[illegible]	[illegible]	[illegible]
DP 4530	[illegible]	DOSE RATE RADIATION SURVEYS	[illegible]
DP 4531	1[illegible]	RADIOACTIVE CONTAMINATION SURVEYS	[illegible]
DP 4532	1[illegible]	PERSONNEL MONITORING PRIOR TO EXITING THE RADIATION CONTROL AREA (RCA)	05/10/1990 05/10/1992
DP 4533	14	AIRBORNE RADIOACTIVITY CONCENTRATION DETERMINATION	05/02/1990 05/02/1992
DP 4534	11	CALIBRATION OF THE PORTABLE AIR SAMPLERS	06/21/1989 08/12/1990
DP 4535	3	TECHNICAL SUPPORT CENTER RADIATION MONITOR FUNCTIONAL/CALIBRATION	02/27/1989 02/27/1991
DP 4536	4	CALIBRATION OF LUDLUM MODEL 177 ALARM RATEMETER	04/04/1990 04/04/1992
DP 4538	0	OPERATION AND USE OF ALARMING DOSIMETER DM [illegible]	02/17/1989 02/17/1991
DP 4539	5	CALIBRATION OF GRAETZ MODEL 1000, 2000 W EXTENDER	12/08/1989 12/08/1991
DP 4540	20	OPERATION OF RADIATION PROTECTION STANDARD SOURCES AND R-CHAMBER	10/11/1989 11/16/1990
DP 4541	9	CALIBRATION OF PIC-6A AND 6B	02/03/1989 02/03/1991
DP 4546	10	CALIBRATION OF PNR-4	04/28/1989 04/28/1991
DP 4547	8	RESPONSE CHECK OF IRT PORTAL RADIATION MONITOR	06/27/1989 06/27/1991
DP 4548		CHANGED TO DP 4648 - 02/03/1988	/ / / /
DP 4549	13	CALIBRATION OF RM-14/RM-19	01/11/1990 01/11/1992
DP 4555	3	CALIBRATION OF THE EBERLINE ESP-1 WITH SPA-3 DETECTOR	09/22/1989 09/22/1991
DP 4558	10	CALIBRATION OF ION CHAMBER SURVEY METERS	03/07/1990 03/07/1992

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DP 4559	7	POCKET DOSIMETER CALIBRATION	09/29/1989 09/29/1991
DP 456[illegible]	6	CALIBRATION OF THE SAM-[illegible]	07/28/1989 07/28/1991
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	4	[illegible]	[illegible]
DP 4567	4	CALIBRATION OF THE LUDLUM [illegible] PROPORTIONAL PORTABLE ALPHA COUNTER	02/27/1990 02/27/1992
DP 4568	2	CALIBRATION OF DOSITEC PR-[illegible] AND PR-[illegible]	04/28/1989 04/28/1991
DP 4569	3	CALIBRATION OF E-520N WITH THE MODEL HP-220A HAND PROBE	03/07/1990 03/07/1992
DP 4572	2	CALIBRATION AND OPERATION OF THE EBERLINE PCM-1B	01/17/1990 01/17/1992
DP 4573	0	GAS MONITOR CALIBRATION	10/20/1989 10/20/1991
DP 4574	0	OPERATION OF ATMOSPHERIC TESTING EQUIPMENT	10/20/1988 10/20/1990
DP 4575	0	OPERATION OF THE RESPIRATOR DECON FACILITY	02/08/1989 02/08/1991
AP 4601	2	ENVIRONMENTAL RADIATION SURVEILLANCE PROGRAM	05/10/1990 02/05/1992
OP 4602		SAMPLING OF FIREFIGHTING FOAM FOR ANNUAL ANALYSIS	/ / / /
OP 4605	17	ENVIRONMENTAL RADIATION SAMPLING AND ANALYSIS	12/18/1989 07/20/1990
OP 4609	5	PERIODIC EVALUATION OF OFF-SITE RADIOLOGICAL DOSES	05/10/1990 05/10/1992
OP 4610		CHANGED TO OP 4501 - 08/19/1988	/ / / /
OP 4611	13	SAMPLING AND TREATMENT OF THE SLC SYSTEM	03/15/1990 03/15/1992
OP 4612	12	SAMPLING AND TREATMENT OF THE REACTOR WATER SYSTEM	03/22/1990 03/22/1992
OP 4613	14	SAMPLING AND TREATMENT OF DIESEL FUEL OIL	04/04/1990 01/05/1991

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OP 4614		CHANGED TO OP A514 - 09/08/1989	
RP 4615	1	SAMPLING OF [illegible] SYSTEM SLUDGE	[illegible] 1989 [illegible]/1991
[illegible]		[illegible]	[illegible]
OP [illegible]	0	CALIBRATION OF CHEMISTRY CONTROLLED [illegible]	[illegible] [illegible]
OP [illegible]	1	[illegible] CALIBRATION OF THE [illegible] PROCESS RADIATION MONITORING SYSTEM	[illegible] [illegible]
OP 4619	0	CALIBRATION OF PLANT STACK MONITORS	09/08/1984 09/08/1991
RP 4620	9	SAMPLING AND ANALYSIS OF INSTRUMENT AND CONTAINMENT INSTRUMENT AIR SUPPLIES	12/18/1989 12/18/1991
RP 4621	9	SAMPLING AND TREATMENT OF THE HOUSE HEATING BOILERS	06/29/1989 06/29/1991
OP 4623	13	SAMPLING AND TREATMENT OF CLOSED COOLING WATER SYSTEMS	03/28/1990 03/06/1991
OP 4624	1	SAMPLING AND TREATMENT OF THE FUEL POOL SYSTEM	07/14/1989 12/22/1990
RP 4625	11	SAMPLING AND TREATMENT OF THE REACTOR STEAM SYSTEM	09/29/1989 04/06/1990
RP 4626	8	SAMPLING AND TREATMENT OF THE CONDENSATE AND FEEDWATER SYSTEMS	01/05/1989 01/05/1991
OP 4627	16	SAMPLING AND TREATMENT OF THE CIRCULATING AND SERVICE WATER SYSTEMS	12/18/1989 06/08/1991
RP 4628	5	SAMPLING AND ANALYIS OF THE RHR HEAT EXCHANGER	06/27/1989 06/27/1991
RP 4629	1	SAMPLING OF THE MAKEUP DEMINERALIZER SYSTEM (MUDS)	03/15/1990 06/27/1991
DP 4648	2	CALIBRATION OF VICTOREEN TLD SYSTEM	01/17/1990 01/17/1992
OP 4800	10	GENERAL SAFETY SURVEILLANCE	03/01/1990 03/01/1992
OP 5200	8	SAFETY SYSTEM ROTATING EQUIPMENT	10/25/1989 10/25/1991
OP 5201	9	SAFETY SYSTEM VALVES	02/17/1989 02/17/1991
OP 5202	7	MAINTENANCE AND INSPECTION OF HEAT EXCHANGERS, PRESSURE VESSELS AND TANKS	/ / 05/25/1991

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OP 5203	14	INSPECTION AND TESTING OF SHOCK SUPPRESSORS	[illegible] 06/17/1990
OP 5204	5	CLEANING AND FLUSHING	[illegible]/27/1989 [illegible]/27/1991
[illegible]	[illegible]	[illegible]	[illegible] [illegible]
[illegible]	[illegible]	[illegible] PUMP [illegible] REMOVAL AND REPLACEMENT	[illegible] [illegible]
[illegible]	[illegible]	[illegible] OVERHAUL AND INSTALLATION	[illegible] [illegible]
AP 5212	[illegible]	MAINTENANCE OF SAFETY SYSTEM ELECTRICAL EQUIPMENT	07/21/1989 07/21/1991
AP 5214	3	REPLACEMENT OF THE FILTERS IN THE ELECTRICAL PRESSURE REGULATOR (EPR PUMPING UNIT	12/02/1988 12/02/1990
OP 5219	1	MOVATS TESTING OF MOTOR OPERATED VALVES	06/21/1989 12/08/1990
OP 5220	11	LIMITORQUE OPERATOR INSPECTION	/ / 01/27/1991
OP 5221	9	480 VAC CIRCUIT BREAKERS INSPECTION, CALIBRATION AND TESTING	12/06/1989 08/29/1991
OP 5222	10	4KV AC CIRCUIT BREAKER INSPECTION CALIBRATION AND TESTING	07/21/1989 01/13/1991
OP 5223	9	EMERGENCY DIESEL GENERATOR MAINTENANCE	05/23/1990 04/16/1992
OP 5224		CHANGED TO OP 5991 - 06/29/1988	/ / / /
OP 5225	4	EMERGENCY DIESEL GENERATOR ELECTRICAL MAINTENANCE	05/23/1990 11/15/1991
OP 5226	5	345KV BREAKER FAILURE TESTING	07/21/1989 01/05/1991
OP 5230	7	REFUELING PLATFORM	02/14/1989 02/14/1991
OP 5231	7	SERVICE PLATFORM	07/28/1989 07/28/1991
OP 5232	7	NEW FUEL INSPECTION STAND	08/29/1989 08/29/1991
OP 5233	7	FUEL PREP MACHINE	10/03/1989 10/03/1991
OP 5234	7	REFUEL FLOOR JIB CRANES	10/03/1989 10/03/1991

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OP 5235	0	AC AND DC MOTOR MAINTENANCE	01/25/1989 01/25/1991
OP 5240	9	TURBINE AND REACTOR BUILDING BRIDGE CRANE INSPECTION AND MAINTENANCE	[illegible]
OP 5241	[illegible]	[illegible]	[illegible]
OP 5241	[illegible]	OPERATION OF THE DRYWELL [illegible] HATCH	[illegible]
OP 5243	2	CALIBRATION OF BALANCE OF PLANT ELECTRICAL DISTRIBUTION RELAYS	[illegible]
OP 5244		CALIBRATION OF NON-SAFETY RELATED MISCELLANEOUS INSTRUMENTS	
OP 5249		4 KV SWITCHGEAR INSPECTION AND TESTING	
OP 5300	8	SPARE OPERATIONAL RWM IMPLEMENTATION	03/06/1989 03/06/1991
OP 5301	9	TIP SYSTEM PREVENTATIVE MAINTENANCE	02/27/1989 02/27/1991
OP 5302	7	DISSASSEMBLY AND ASSEMBLY PROCEDURE FOR SRM/IRM DETECTOR	08/29/1989 08/29/1991
OP 5303	11	MSIV PREVENTATIVE MAINTENANCE AND FUNCTIONAL TEST	02/17/1989 02/17/1991
OP 5304	6	MAINTENANCE AND TESTING OF GE RELAYS	01/11/1991 01/11/1993
OP 5305	7	SOLENOID VALVE MAINTENANCE	02/10/1989 02/10/1991
OP 5306	6	REFUEL CRANE CALIBRATION	08/29/1989 08/29/1991
OP 5307	0	ELECTRICAL CHECKOUT OF NEUTRON MONITORING DETECTORS	05/03/1989 05/03/1991
RP 5308	5	TURBINE VACUUM TRIPS FUNCTIONAL/ CALIBRATION TEST	02/27/1990 02/27/1992
OP 5309	5	CALIBRATION OF PRIMARY CONTAINMENT ATMOSPHERE CONTROL SYSTEM	08/29/1989 08/29/1991
OP 5310	2	NUCLEAR BOILER RECIRCULATION PUMP SYSTEM	07/14/1989 07/14/1991
OP 5311	5	CALIBRATION OF SLC INSTRUMENTATION	03/06/1989 03/06/1991
OP 5312	5	CALIBRATION OF CORE SPRAY SYSTEM BALANCE OF PLANT INSTRUMENTATION	08/12/1988 08/12/199[illegible]

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OP 5313	6	CALIBRATION OF RHR/LPCI SYSTEM BALANCE OF PLANT INSTRUMENTATION	/ / 06/29/1990
OP 5314	7	CALIBRATION OF RCIC SYSTEM BALANCE OF PLANT INSTRUMENTATION	/ / 02/27/1992
OP 5315	8	CALIBRATION OF RHR SYSTEM BALANCE OF PLANT INSTRUMENTATION	/ / / /
OP 5316	7	CALIBRATION OF STATION SERVICE WATER UNITS BOP SYSTEM	/ / / /
OP 5317	8	CALIBRATION OF RESIDUAL HEAT REMOVAL (RHR) SERVICE WATER BOP BALANCE OF PLANT (BOP) INSTRUMENTATION	/ / / / / /
OP 5318	8	CALIBRATION OF CRD HYDRAULIC CONTROL UNIT ACCUMULATOR INSTRUMENTATION	/ / 04/28/1989 04/28/1991
OP 5319	6	CALIBRATION OF REACTOR JET PUMP FLOW INSTRUMENTATION	05/05/1988 02/14/1991
RP 5320	7	TURBINE EHA MOOG VALVE REPLACEMENT	/ / 05/04/1990
RP 5321	6	REPLACEMENT AND CALIBRATION OF PANAMETRIC MOISTURE DETECTORS	01/13/1989 01/13/1991
RP 5322	7	RECIRC PUMP MG BAILEY POSITIONER MAINTENANCE	07/28/1988 07/28/1991
RP 5323	9	AIR FILTER PREVENTATIVE MAINTENANCE	07/14/1988 07/14/1991
OP 5324	8	APRM FLOW CONVERTER/POWER SUPPLY CALIBRATION	09/29/1988 09/29/1990
OP 5325	6	CALIBRATION OF CRD INSTRUMENTATION	05/10/1990 05/10/1992
OP 5326	7	CALIBRATION OF DIESEL FUEL OIL STORAGE INSTRUMENTS	03/07/1990 03/07/1992
OP 5327	7	CALIBRATION OF PLANT FIRE PROTECTION SYSTEM INSTRUMENTS	04/11/1990 04/11/1992
OP 5328	2	FUEL POOL COOLING SYSTEM INSTRUMENTATION CALIBRATION	03/15/1990 03/15/1992
OP 5329	5	CALIB OF SGTS BALANCE OF PLANT INSTRUMENTATION	05/05/1988 05/05/1991
OP 5332	6	TIP TUBING REMOVAL AND REPLACEMENT	04/11/1990 04/11/1992
OP 5333	6	SRM/IRM DETECTOR INSERT/RETRACT MECH MAINTENANCE	02/27/1989 02/27/1991
OP 5334	9	TIP SHEAR VALVE SQUIB CHARGE TESTING AND REPLACEMENT	05/10/1990 05/10/1992

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OP 5335	4	PRIMARY METEOROLOGICAL SYSTEM FUNCTIONAL/CALIBRATION TEST	04/25/1988 04/25/1990
OP 5337	0	HPCI CONTROL SYSTEM CALIBRATION TEST	04/25/1989 04/25/1991
RP 5338	[illegible]	[illegible]	[illegible]
RP 5339	3	[illegible]	[illegible]
RP 5341	5	[illegible]	[illegible]
OP 5343	4	BACKUP METEOROLOGICAL SYSTEM FUNCTIONAL/CALIBRATION TES	04/25/1988 04/28/1991
OP 5350	4	CALIBRATION OF PLANT RECORDERS	01/12/1989 01/13/1991
RP 5351	4	MAIN STEAM PRESSURE TRANSDUCER (PT-4 RESPONSE AND HYSTERESIS TEST	04/25/1990 04/25/1992
RP 5352	3	ELECTRONIC PRESSURE REGULATOR (EPR - CV/BPV FUNCTIONAL/CALIBRATION TEST (SHUTDOWN)	04/06/1988 04/06/1990
OP 5353	3	FEEDWATER CONTROL SYSTEM	10/03/1989 02/17/1991
OP 5354	2	CALIBRATION OF CONDENSATE SYSTEM BALANCE OF PLANT INSTRUMENTATION	04/11/1990 04/11/1992
OP 5355	3	RBCCW AND TBCCW COOLING WATER SYSTEMS	12/08/1988 03/15/1991
OP 5356	1	MAIN, EXTRACTION AND AUXILIARY STEAM SYSTEM	/ / 05/04/1990
OP 5357	1	REACTOR WATER CLEAN-UP SYSTEM	/ / 06/06/1990
OP 5358	2	RECIRCULATION FLOW CONTROL	11/16/1988 11/16/1990
OP 5359	3	ADVANCED OFF GAS SYSTEM BALANCE OF PLANT INSTRUMENTATION	02/17/1989 02/17/1991
OP 5360	2	CONDENSATE DEMINERALIZER	01/25/1989 01/25/1991
OP 5361	3	DIESEL GENERATORS A AND B INSTRUMENT CALIBRATION	11/22/1989 11/22/1991
OP 5362	2	FEEDWATER HEATER DRAINS AND VENTS	06/30/1989 06/30/1991
[illegible]	[illegible]	[illegible]	[illegible]

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OP 5364	2	CONTAINMENT AND STATION SERVICE AIR SYSTEM	03/28/1990 03/28/1992
OP [illegible]	0	[illegible] REMOVAL AND REPLACEMENT	[illegible]
OP [illegible]	[illegible]	[illegible] CONTROL [illegible]	[illegible]
OP [illegible]	0	[illegible] MONITORING SYSTEM [illegible] MAINTENANCE	[illegible]
OP [illegible]	[illegible]	[illegible] HEATING SYSTEM	[illegible]
OP 537[illegible]		RCIC CONTROL SYSTEM CALIBRATION TEST	
OP 53[illegible]		TIP SYSTEM TORQUE PLOTS	/ /
RP 8400	9	PERIODIC CALIBRATION VERIFICATION OF IMPORTANT COMPUTER ANALOG INPUTS	05/10/1990 05/10/1992
DP 8401	5	DATA SHUFFLING AND DATA CHECKS FOR PROCESS COMPUTER AT BOC	/ / 07/20/1990
RP 8430	3	INITIATING REQUESTS FOR COMPUTER RESOURCES	03/07/1990 03/07/1992
OP 5981	2	INSTALLATION OF CABLE PENETRATION SEALS AND FIRE BREAKS	04/11/1990 04/11/1992
AP 6000	13	PLANT DESIGN CHANGE REQUESTS	09/22/1989 09/22/1991
AP 6001	14	INSTALLATION TEST/SPECIAL TEST PROCEDURES	09/29/1989 09/29/1991
AP 6002	0	PREPARING 50.59 SAFETY EVALUATIONS	08/29/1989 08/29/1991
AP 6003	13	PLANT ALTERATION REQUEST	10/25/1989 10/25/1991
AP 6004	12	ENGINEERING DESIGN CHANGE REQUEST	11/03/1988 11/03/1990
AP 6010	9	IN-PLANT AUDITS	05/30/1990 05/30/1992
AP 6015	4	RECEIPT INSPECTION OF SAFETY CLASS OR SAFETY RELATED MATERIALS	08/30/1989 02/13/1991
AP 6017	3	MATERIAL UPGRADE AND DEDICATION EVALUATION (MUADE)	05/16/1990 08/21/1991
AP 6021	13	NONCONFORMANCE REPORTS	/ / 05/25/1991

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AP 6022	10	JOB ORDER FILES	05/16/1990 05/16/1995
AP 6044	7	PLANT HOUSEKEEPING	09/12/1991 09/12/1996
AP 6051	7	[illegible] AND [illegible]	[illegible] [illegible]

05/08/90

Attachment 16-1

Vendor Manual Rev Group No	VY Equipt Manual No	Vendor	Manual/Equipment Title	Resp Rev
VMRG-0038		Chicago Bridge & Iron Co	NSP Reactor Vessel	GN
VMRG-0039		Chicago Bridge & Iron Co	Airlocks & Closures -- Operating & Maintenance Instructions	GN
VMRG-0049		CVI Corporation	Advanced Offgas System (AOG)	LB
VMRG-0063	VYEM-0107	Fairbanks Morse (Engine Div) Colt Industries	Diesel Generators	GN
VMRG-0064	VYEM-0107	Fairbanks Morse Engine Division	Fairbanks Morse Power System Products Manual -- Repair & Service Inform	GN
VMRG-0065		Fluor Products Company Inc.	Counterflow and Crossflow Cooling Towers-- Operating and Maint Instruct	GN
VMRG-0066		Fluor-Western	Cooling Tower Speed Reducers -- Field Repair Instructions	GN
VMRG-0067		General Electric	Ammeters and Voltmeters -- Types AB&DB-40,41,42 & 44 Install Instruct	GR
VMRG-0068		General Electric	Panelboards -- Type NAB & NHB	GR
VMRG-0069		General Electric	Type AK Low Voltage Power Circuit Breakers -- Products Information	GR
VMRG-0071		General Electric	Type HGA Auxiliary Relays -- Renewal Parts	GR
VMRG-0072		General Electric	Type HFA Auxiliary Relays -- Renewal Parts	GR
VMRG-0073		General Electric	Type PJV Instantaneous Voltage Relays Renewal Parts	GR
VMRG-0074		General Electric	Type PJV Instantaneous Voltage Relays Renewal Parts	GR
VMRG-0075		General Electric	Type IAC Time-Overcurrent Relays -- Renewal Parts	GR
VMRG-0076		General Electric	Type CFVB Voltage Balance Relays -- Renewal Parts	GR
VMRG-0077		General Electric	Type CFVB Voltage Balance Relays -- Renewal Parts	GR
[illegible]		[illegible]	[illegible]	[illegible]

VERMONT YANKEE EQUIPMENT MANUALS - REMAINING

05/02/90

Vendor Manual Rev Group No	VY Equipt Manual No	Vendor	Manual/Equipment Title	Resp Rev
		Electric		
VMRG-0079		General Electric	(TITLE NOT CLEAR)	GR
VMRG-0080		General Electric	Type SBM Control Switches -- Renewal Parts	GR
VMRG-0081		General Electric	Metal-Clad Switchgear -- Types M-26 and M-36 -- Renewal Parts	GR
VMRG-0082		General Electric	Type ML-13 Mechanisms--Renewal Parts	GR
VMRG-0083		General Electric	Power Circuit Breakers--Types AK-2/2A -75, AK-3/3A-75, AK-4/4A-75 and AK-5/5A-75	GR
VMRG-0084		General Electric	Magne-Blast Circuit Breaker Type AM-4.16-150/250-9--Renewal Parts	GR
VMRG-0085		General Electric	Instrument Transformers--Molded and Other Dry Types -- Instructions	GR
VMRG-0086		General Electric	IC2800 D-C General Purpose Contactors	GR
VMRG-0087		General Electric	Time-Overcurrent Relays--Instructions	GR
VMRG-0088		General Electric	Undervoltage Relays -- Instructions	GR
VMRG-0089		General Electric	Time-Overcurrent Relays--Instructions	GR
VMRG-0090		General Electric	Instantaneous Auxiliary Relay -- Instructions	GR
VMRG-0091		General Electric	Metal-Clad Switchgear --Types M26 & M36 -- Instructions	GR
VMRG-0092		General Electric	Voltage Relays -- Instructions	GR
VMRG-0093		General Electric	Low Voltage Drawout Switchgear -- Type AKD -- Instructions	GR
VMRG-0094		General Electric	New Tri-Clad Vertical, High-Thrust, Polyphase Induction Motors--Instruct	GR
VMRG-0095		General Electric	Multicontact Auxiliary Relay -- Type HFA51 -- Instructions	GR

VERMONT YANKEE EQUIPMENT MANUALS - REMAINING

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Vendor Manual Rev Group No	VY Equipt Manual. No	Vendor	Manual/Equipment Title	Resp Rev
VMRG-0096		General Electric	Control and Transfer Switch Type SBF -- Instructions	GR
VMRG-0097		General Electric	Auxiliary Relays -- Hand Reset with Target--Types HEA61 & HEA62	GR
VMRG-0098		General Electric	Tri-Clad Vertical Induction Motors - High Thrust, Hollow & Solid Shaft P Base	GR
VMRG-0099		General Electric	Molded Case Circuit Breakers -- Motor Operated Mechanisms	GR
VMRG-0100		General Electric	Conversion Kits (MVT) for AK-15/25	GR
VMRG-0101		General Electric	DC Auxiliary Relays -- Instructions	GR
VMRG-0102		General Electric	Instantaneous Voltage Relays -- Instructions	GR
VMRG-0103		General Electric	Time Overcurrent Relays	GR
VMRG-0104		General Electric	Voltage Balance Relay -- Type CFVB11A Instructions	GR
VMRG-0105		General Electric	A-C Undervoltage Relay--Type NAV 11B	GR
VMRG-0106		General Electric	Power Curcuit Breakers -- Types AK-2/2A-15; AK-2/3/2A/3A-25; AKU-2/3/2A/3A-25 -- Maintenance Instructions	GR
VMRG-0107		General Electric	Tri-clad Single and Polyphase Ball Bearing Motors -- Installation and Maintenance Instructions	GR
VMRG-0108		General Electric	Secondary Unit Substation Tranformers -- Instructions	GR
VMRG-0109		General Electric	Winding Temperature Equipment -- Instructions	GR
VMRG-0110		General Electric	Low-Voltage Power Circuit Breakers Maintenance Manual (Supplement to GEK - 7303)	GR
VMRG-0111		General Electric	Magne-Blast Circuit Breaker--Instruct and Recommended Parts for Maintenance	GR

VERMONT YANKEE EQUIPMENT MANUALS - REMAINING

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Vendor Manual Rev Group No	VY Equipt Manual No	Vendor	Manual/Equipment Title	Resp Rev
		Electric	Instructions	
VMRG-0113		General Electric	(TITLE NOT CLEAR)	GR
VMRG-0114		General Electric	Field Testing of General Electric Type Overcurrent Trip Devices	GR
VMRG-0115		General Electric	AK Power Circuit Breakers -- Electrically and Manually Operated Types AKF-2-25; AKF-2A-25--Instruct	GR
VMRG-0116		General Electric	Recirculating Water Pump Motors	GR
VMRG-0117		General Electric	G.E. Penetration Seals 238X32261	GR
VMRG-0118		General Electric	Low Voltage Power Circuit Breakers Installation and Operation Manual	GR
VMRG-0119		General Electric	(TITLE NOT CLEAR)	GR
VMRG-0120		General Electric	EJ Current-Limiting Power Fuses, EK Fuse Supports and Fuse-Disconnecting Switches -- Instructions	GR
*VMRG-0121		General Electric	Vital M-G -- Instructions	GR
VMRG-0122		General Electric	Magne-Blast Circuit Breaker--Type: AM-4.16-250-9, 1200 & 2000 Amperes with ML-13 Mechanism -- Instructions and Recommended Parts for Maintenance	GR
VMRG-0123		General Electric	Multi-Contact Auxiliary Relay -- Type HFA151 -- Instructions	GR
VMRG-0124		General Electric	Electrical Protection Assembly 914E175 (442x780-005) -- Operation and Maintenance Instructions	GR
VMRG-0125		General Electric	Type AK Low Voltage Power Circuit Breakers--Renewal Parts Information	GR
VMRG-0130		Graver	Cond. Demins.	GW
VMRG-0172		TTI Engineering	Refuel Platform Air Compressor Replacement	GW

VERMONT YANKEE EQUIPMENT MANUALS - REMAINING

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Vendor Manual Rev Group No	VY Equipt Manual No	Vendor	Manual/Equipment Title	Resp Rev
VMRG-0238		Yokogawa	Types AB-16,-40, DB-16,-40 Ammeters and Voltmeters --Install Instructions	GR
VMRG-0229		Yokogawa	CRP 9-8 Vital AC Frequency/Voltage Indication and Supply Selector Switch	GR
VMRG-0235		Automatic Switch Co(ASCO)	ASCO Valves -- Installation and Maintenance Instructions	LG
VMRG-0249		General Electric	General Electric -- G.M Connectors (LPRM)	GR
VMRG-0250		General Electric	Relays (Composite Manual - Coordinate with G.E./Maintenance)	GR
VMRG-0251		General Electric	GEK-83281 Safety Relief Valve Open/ Close Monitoring System -- Operation and Maintenance Instructions	GR
VMRG-0291		General Electric	GEA-10678 -- MicroVersaTrip RMS-9 Conversion Kits -- For AK/AKR Low Voltage Power Circuit Breakers	GR
VMRG-0292		General Electric	GEH-4657 -- MicroVersaTrip Programmer For Circuit Breakers 150-4000 Amperes; 240, 480, & 600 VAC	GR
VMRG-0293		General Electric	GEH-5369 -- MicroVersaTrip RMS-9 Programmer -- For Circuit Breakers 150-4000 AMPS;240, 480 and 600 VAC	GR
VMRG-0294		General Electric	GEH-5415 -- MicroVersaTrip RMS-9 Conversion Kits -- Breaker Types AK-15, AK/AKU-25	GR
VMRG-0295		General Electric	GEH-97728 -- MicroVersaTrip RMS-9 Conversion Kits -- Breaker Types AK/AKU/AKT-50, AKS/AKSU/AKST-50, AK/AKR-75, AK/AKR-100	GR
VMRG-0296		General Electric	GES-6227 -- Low-Voltage Power Circuit Breakers Type AKR -- Time Current Curves	GR
VMRG-0310	VYEM-0118	ASCO	Transfer Switch - For DC-3	LG
*VMRG-0325		General Electric	Control Rod Drive	GR

VERMONT YANKEE EQUIPMENT MANUALS - REMAINING

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Vendor Manual Rev Group No	VY Equipt Manual No	Vendor	Manual/Equipment Title	Resp Rev
		Electric		
VMRG-0327		General Electric	Nuclear Fuel Servicing	GR
VMRG-0330		Edward	Misc. Edward Station Valves	GH

ATTACHMENT 109-1

IMPLEMENTING PROCEDURES AND POLICIES
FOR QUALIFYING SAFETY SYSTEM EQUIPMENT

Plant Procedures

AP 0015	AP 0203	AP 6000	AP 6025
AP 0017	DP 0301	AP 6001	AP 6700
AP 0020	DP 0302	AP 6003	AP 6802
AP 0021	AP 0620	AP 6004	AP 6805
AP 0045	AP 0803	AP 6010	AP 6806
AP 0125	AP 0806	AP 6015	AP 6807
AP 0140	AP 0831	AP 6017	AP 6808
AP 0153	AP 4000	AP 6021	AP 6809
AP 0154	AP 4025	AP 6022	AP 6810
DP 0157	AP 4026	AP 6024	AP 6811
AP 0201	DP 5204		

Policies

VYP317	Procedure for Disposition of Company Assets
VYP318	Contracts Administration Procedure
VYP319	Vendor Analysis Procedure
VYP321	Request for Quotation/Bid Evaluation Procedure
VYP327	Procurement Engineering Administrative Procedure
VYP328	Technical Evaluation Procedure
VYP329	Equivalency Evaluation Procedure
VYP330	Commercial Grade Dedication Procedure
VYP331	Procurement Quality Assurance Procedure
VYP332	Inventory Procurement Procedure

YNSD Procedures

WE-001	Administration of the Engineering Manual
WE-002	Design Control Document
WE-005	Standard Memorandum
WE-100	Engineering Design Change Request
WE-101	Plant Design Change Request
WE-102	Design Criteria
WE-103	Engineering Calculations and Analyses
WE-104	Qualification Tests
WE-105	Drawings
WE-106	Procedures and Instructions
WE-107	Specifications
WE-108	Computer Codes
WE-109	Engineering Deficiency Reports
WE-200	Material and/or Service Purchase Request
WE-201	Non-Conformance Reports
WE-202	Technical Evaluation of Vendors
WE-203	Request for Bids
WE-205	Bid Evaluation and Procurement

/dm

Signatures

I, Donald A. Reid, being first duly sworn, do depose and say that the foregoing answers are true, except insofar as they are based on information that is available to Vermont Yankee Nuclear Power Corporation but not within my personal knowledge, as to which I based on such information believe them to be true.

Donald A. Reid

As to objections:

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Dated: May 30, 1990.

Notary Public

DIANE M. McCUE
NOTARY PUBLIC
WINDHAM COUNTY, VERMONT

Certificate of Service

I, R. K. Gad III, hereby certify that on May 30, 1990, I made service of the within answers to interrogatories, by mailing copies thereof, first class mail, postage prepaid, as follows:

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Washington, D.C. 20555

Jerry Harbour
Administrative Judge
Atomic Safety and Licensing Board
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Frederick J. Shon
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