

Docket
File



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20535

May 28, 1992

Docket No. 50-334
Serial No. BV-92-027

Mr. J. D. Sieber, Vice President
Nuclear Group
Duquesne Light Company
Post Office Box 4
Shippingport, Pennsylvania 15077-0004

Dear Mr. Sieber:

SUBJECT: STRUCTURAL AUDIT OF SAFETY-RELATED STRUCTURES - AUDIT PLAN AND AGENDA

The NRC staff plans to conduct an audit of safety-related structures at Beaver Valley Power Station, Unit 1 during the week of June 15, 1992. I discussed our tentative plans for this audit several weeks ago with several of your staff, but at that time I did not have specific details of our plan for the audit and an agenda. We have completed our planning and our audit plan and agenda are shown in the enclosure to this letter.

The objective of the plant visit is to obtain information about selected safety-related structures at Beaver Valley, and is part of a larger effort to obtain similar information from several older plants. The information will be used to draw some generic conclusions regarding the degradation of structures at operating plants. We have already visited four plants - Trojan, Turkey Point, Point Beach, and Robinson - to conduct similar audits for this effort.

The audit team will comprise two NRC staff and two consultants from Brookhaven National Laboratory. I will be onsite also during most of the audit.

I recognize that our proposed discussions on seismic design criteria and the A-46 issues are not directly related to the main purpose of our site visit. However, a discussion of these issues will provide us with valuable

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Mr. J. D. Sieber

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information on important topics of current interest and will save staff resources. In this regard, we will be mindful to avoid any unnecessary burden on your staff.

Sincerely,

/s/

Albert W. De Agazio, Sr. Project Manager
Project Directorate I-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosure:
As stated

cc w/enclosure:
See next page

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Mr. J. D. Sieber
Duquesne Light Company

Beaver Valley Power Station
Units 1 & 2

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ENCLOSURE

PLAN FOR BEAVER VALLEY POWER STATION, UNIT 1, VISIT

June 15-19, 1992

TEAM MEMBERS:

NRC

J. Ma
R. Rothman

CONSULTANTS

J. Braverman
R. Morante

June 15, 1992:

The team plans to arrive at the site at approximately 2:00 p.m. to complete necessary site access training. The NRC staff members have already received a formal site access training course at NRC and unescorted access has been requested. Escorted access only has been requested for the NRC Consultants.

June 16, 1992: 8:00 a.m. - 5:00 p.m. (with 1 hour break for lunch)

Meeting with Duquesne Light Company staff to understand the Beaver Valley experience with structural integrity maintenance, surveillance, degradations, modifications/repairs of safety-related structures, including:

- A brief presentation of seismic design criteria adopted for the development of in-structure floor response spectra, design codes/standards used for design of Category I structures against various loads, and design criteria for wind (including hurricane and tornado), tornado missiles, safety-related tanks and flood.
- Results of containment testing and surveillance programs, including initial leak-rate test, periodic leak-rate retesting, continuous sub-atmospheric pressure monitoring, and periodic surveillance tests. Include key findings such as displacement measurements, crack measurements, liner strain, etc.
- Support anchorages (installation and maintenance experience on expansion anchors, dispositions of IE Bulletin 79-02 and IE Notice 80-21 issues, examples of observed anchorage failures and their safety evaluations, experience on other types of anchor failures, etc.).
- Spent fuel pool and spent fuel storage racks (general integrity of pool structure, liner and racks, status of plans for spent fuel storage rack modification to increase storage capacity, concrete cracking and pool leakage, spent fuel storage fuel rack geometry maintenance, heavy loads control, etc.).

- Intake structure (maintenance and observation of submerged structural elements, concrete cracking, spalling, rebar corrosion, past repairs/safety assessment, observed unexpected displacements, etc.).
- Masonry walls (brief summary of past fixes (IE Bulletin 80-11), maintenance and surveillance, interface with main structures, piping attachments, expansion anchors, joints and through-block crackings, examples of fixes and modifications since 1980, new data on any II/I interference issues, new additions/deletions, etc.).
- Results of observations or measurements of free spaces provided between adjacent structures and the verticality of those structural boundaries, if any, to ensure no physical interference between structures during earthquakes; otherwise, discuss the rationale for not having such data.
- Describe the steps taken during original construction and during plant operation for corrosion protection such as coatings and waterproofing membranes. How successful have they been and how are they maintained?
- Break for lunch (approx. at noon) and staff caucus.
- Summarize geology/foundation conditions and ground water effects on structures, foundations, and buried systems (piping, electrical systems, etc.). Ground water problems such as seepage through foundation walls or floors and containment lower elevation ponding/seepage, if any.
- Piping supports anchorage issues (examples of problems encountered in concrete embedded anchors for piping and equipment) and buried piping integrity and inspection/repairs.
- Description of any surveillance or inspection programs which identify and monitor concrete cracking or steel corrosion in Category I structures.
- Settlement issues (examples of abnormal or unexpected structural foundation settlements observed and their engineering dispositions, repairs, monitoring programs, etc.).
- Seismic instrumentation (operability and functionality maintenance, difficulties experienced and records retrieved, instrumentation maintenance specs., upgrading plan, if any, etc.).
- Safety related storage tanks (operating and maintenance experience, integrity of anchor bolts, tank leakage and corrosion, if any, unexpected settlements, earthquake experience, integrity of tank appurtenances, cracking of tank foundation, etc.).

- Prepare a list with a brief description of all Civil/Structural LERs to permit the selection of a few LERs for review.
- Discussion of Duquesne Light Company dispositions of structural issues identified in previous NRC inspection reports.
- List of civil/structural related 10 CFR 50.59 evaluations and key summary of the evaluations (the staff plans to select a few 50.59 evaluations for subsequent audit at the site).
- Plant safety procedures in the event of a high flood, earthquake, explosion, hurricane or tornado.
- Summary of planned activities on future license renewal application.
- Summary of activities related to USI A-46 resolution, including in-structure response spectra, equipment and pipe support anchorage, cable trays/conduits and tanks.
- Summary of activities related to IPEEE.
- Duquesne Light Company suggested items for discussion.
- Additional staff-identified items for discussion.
- Staff caucus.
- Reiteration of action/follow-up items.

A brief presentation by Duquesne Light Company covering each of the above items should be scheduled. Generally, each briefing should not exceed 10 minutes supported by a few slides followed by questions and/or discussions. Pertinent 10 CFR 50.59 documents should be readily available for staff selection of key documents for detailed review. Staff caucuses of 30 minutes duration are planned immediately following the lunch break and prior to the last task (reiteration of action/follow-up items.) Duquesne Light Company is requested to allocate presentation time for each item with strict time control and the staff will limit its questions to the essential ones such that the entire agenda can be covered by 5:00 p.m.

June 17, 1992: 8:00 a.m. - 5:00 p.m.

The team will walkdown the plant including the following structures/areas:

- Walkdown and examination of exterior parts of the containment (wall, dome if accessible, junction at basemat) and interfacing areas with other Category I structures.

- Walkdown of auxiliary, service, control, fuel and diesel buildings. Items to be examined are basemat, concrete walls, floors, and roof, building structural steel, masonry walls, key cable trays and conduits, equipment and piping anchorages, tanks, and areas of water-seepage, ponding, corrosion, or other signs of degradation.
- Walkdown and examination of turbine building and outside periphery of the power block structures.

Duquesne Light Company assistance is requested to develop an efficient walkdown routing plan to cover the above listed structures and areas within 5 to 6 hours with time allowance for lunch and staff caucus. The staff may change or modify the routing plan during the day to maximize gathering of pertinent information regarding the integrity, functionality, degradation, maintenance/surveillance, repair and modification of structures at Beaver Valley. During the walkdown, Duquesne Light Company support and provision of personnel who are familiar with the above listed information and able to respond to related staff questions are requested. At the end of the walkdown, the staff will caucus and may also hold a meeting with Duquesne Light Company depending on the availability of time.

June 18, 1992:

8:00 a.m. - 12:00 p.m.

The staff will continue walkdown of the following items with the Duquesne Light Company assistance in preparing a routing plan to complete the task by noon:

- Walkdown and examination of the intake structure.
- Walkdown and examination of any provisions made for flood and tornado protection, and any settlement/water table/flow monitoring devices.
- Walkdown of tanks including refueling water tank, demineralized water storage tank, coolant recovery tank, caustic tank, etc.
- Walkdown and examination of special areas of interest identified during the June 16, 1992 meeting.

During the morning walkdown session a subgroup will be selected to review a few 50.59 documents previously chosen at the June 16, 1992 meeting.

12:00 p.m. - 3:00 p.m.

- Lunch break and staff caucus.

3:00 p.m. - 5:00 p.m.

- Staff discussion with Duquesne Light Company of significant findings and observations identified during the plant walkdown.
- Staff discussion with Duquesne Light Company of questions and issues identified in the review of 50.59 evaluations, surveillance and inspection reports, plant safety procedures and other safety assessment documents.
- Identification of Duquesne Light Company commitments and follow-up items as well as staff action items.

June 19, 1992: 8:00 a.m. - 10:00 a.m.

- Exit meeting with Duquesne Light Company.