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November 30, 1979

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
United States Nuclear Regulatory Commission
Washington, DC 20555

Reference: Beaver Valley Power Station, Unit No. 1
Docket No. 50-334
Discussion of Lessons Learned Short Term Requirements

Gentlemen:

We have reviewed your October 30, 1979, letter and the two enclosures which clarify the NRC staff requirements and provide the staff's implementation and review schedule. The following additional information relating to the status and/or implementation for each requirement at Beaver Valley also takes into account the additional clarification provided in a conference call held with members of your staff and members of the Duquesne Light Company on November 16, 1979.

During this conference we informed your staff that a firm scheduled date of December 1, 1979, had been established for the start of the Beaver Valley refueling and modification outage.

We were informed at that time that the majority of the Category A Implementation Items could be completed at any time during this shut down but that all Category A Items must be completed prior to the plant start up which is scheduled for mid 1980.

We were further instructed to complete all possible Category B Items in order to avoid another shutdown prior to January 1, 1981.

The present status of each NUREG 0578 item follows:

Section 2.1.1 - Emergency Power Supply - Pressurizer Heater

The Pressurizer Back Up Heaters are capable of being manually connected to the Class IE electrical buses. A total of 485 KW in 2 groups of 270 and 215 KW can be connected to each of the two diesel generators. This capacity exceeds the 400 KW required to maintain subcooled conditions for a 1400 cubic foot pressurizer. The manner in which these connections are presently made meets all requirements in your October 30, 1979, letter with the exception of the detailed procedures for their use in a post LOCA mode. These procedures will be available for use prior to station startup subsequent to the outage.

Section 8 of the Beaver Valley Power Station FSAR provides additional information on the electrical bus layouts at Beaver Valley.

Emergency Power Supply for Pressurizer Relief and Block Valves and Pressurizer Level Indication

The power supply for these items meets all the requirements of the Staff Position and the clarification provided in our October 30, 1979, letter.

The DC solenoid valves which provide air to the diaphragm operated PORVs are powered from a station battery that is not associated with the battery that powers the solenoids used on the air starting motors for the diesel generator that powers the associated PORV Block Valve. We believe that this arrangement meets the requirements of the staff position.

We therefore plan to retain the existing power circutry for the PORV Block Valves.

The air supply for the Power Operated Relief Valves is powered by the containment air compressors which are capable of being powered by the Diesel Generators. We have also provided a nitrogen supply back up for these valves as described in our submittal on the Reactor Vessel Overpressure Protection System. In addition, Beaver Valley has installed a diesel driven air compressor which can be manually loaded onto the normal station air system.

We have successfully utilized this diesel air compressor in the past during a loss of station power and believe it to be a reliable source of back up air. This diesel driven air compressor is not classifed as Category I and no Category I type qualification papers exist for this air compressor. We have no plans to attempt to upgrade this air compressor to Category I since such an exercise would not improve the presently satisfactory reliability of this equipment which for the PORVs represents a back up to a back up air supply. The steam generator level instruments are presently supplied from the station vital buses.

Section 2.1.2

As previously discussed, we are participating in the EPRI sponsored testing program. We believe that this program is being conducted in accordance with the staff requirements as clarified. The program shall be submitted by Mr. Cordell Reed, Chairman of the TMI Owners Group of Westinghouse plants.

Section 2.1.3(a) - Direct Indication of PORVs and SVs

We will provide direct indication of the position of the Pressurizer Relief Valves and Power Operated Valves prior to station start up in 1980. These indications will comply with the clarifications provided in your October 30, 1979, letter.

Section 2.1.3(b) - Subcooling Meter

We are presently evaluating proposals received from the various vendors of subcooling meters. We do not plan to utilize the plant computer for this application and will provide a back up procedure based upon the use of steam tables and/or saturation pressure/temperature curves.

The saturation meter which will be installed and operational at Beaver Valley prior to station start up in 1980 will comply with all staff requiremetns as clarified in your October 30, 1979, letter. The detailed information requested on pages 11 and 12 of Enclosure No. 1 in your October 30 letter will be submitted as soon as possible after placement of the purchase order for this device.

The detailed procedures to be used by the operators to recognize inadequate core cooling with existing instrumentation, the description of this existing instrumentation, and the detailed analyses needed to form the basis for operator training and procedure development will be submitted by Mr. Cordell, Chairman of the TMI Operating Plant Owners Group of Westinghouse plants to Mr. D. F. Ross of the NRC Bulletins and Orders Task Force. The Duquesne Light Company has actively participated in the Owners Group work and is represented on the Procedures Subcommittee. All procedures developed by this subcommittee have been reviewed by the Beaver Valley Reactor Engineer, who is a licensed senior operator and by the Technical Assistant - Nuclear, who serves as a member of the company Off-Site Review Committee. We convey this information to demonstrate that the Duquesne Light Company is actively participating in the work of the Owners Group.

Section 2.1.3(c) - Additional Instrumentation

The Duquesne Light Company is continuing to review the desirability of providing additional instrumentation for the detection of inadequate core cooling. In addition to the requirements provided in your clarifications on pages 13 and 14 of Enclosure 1, we will require that any additional instrumentation must possess the following characteristics:

1. The design of the sensing, transmitting and read out devices must have been proven to be reliable, maintainable and drift free by previous utilization on similar applications.

2. A high degree of assurance that adverse radiological, thermal, moisture, chemical and seismic conditions will not result in output readings that could cause confusion, delay prompt, proper operator response or result in improper operator action prior to, during or subsequent to, any plant normal operating, transient or accident condition.

We shall promptly inform you when the necessity for additional instrumentation has been established and, when additional instrumentation has been selected and ordered, a schedule for its installation shall be provided.

Section 2.1.4 - Containment Isolation

Containment Isolation is initiated at Beaver Valley by the following diverse means:

1. Containment Pressure and
2. Safety Injection

Since the Safety Injection Signal is generated when various and diverse reactor coolant system parameters, and/or steam and feedwater system parameters either individually or in combination reach values which have been determined by analyses to signify the occurrence of, or approach to, a transient or accident condition which requires the actuation of the Emergency Core Cooling System.

The design of the control systems for the automatic containment isolation valves which are actuated by these signals is such that a resetting of the isolation signal will not result in the automatic reopening of any containment isolation valve.

We are presently reviewing all mechnical systems which enter and exit the containment structure to determine whether they have been properly categorized as essential or nonessential.

The results of this review and any changes to the containment isolation design that might be required as a result of the reevaluation will be forwarded to you by January 31, 1980, in accordance with Staff Position 2 and Clarification 3. We understand that you wish to have this information submitted by January 1, 1980, but this schedule can not be met due to the large workload that our staff is experiencing in preparation for the outage which is scheduled to begin in December, and due to the fact that numerous other key personnel engaged in the performance of this review effort will be unavailable for various periods of time during the month of December due to previously scheduled vacations.

For these reasons, the review and reevaluation of the essential systems can not be completed until the end of January, 1980. Any modifications to the containment isolation design that are determined to be necessary as a result of this review will be completed prior to station start up in mid 1980.

Section 2.1.5(a) - Dedicated H_2 Control Penetration

Beaver Valley is equipped with combined design containment penetrations which have been properly sized for the two permanently installed Atomics - International Hydrogen Recombiners. A tap is provided for the two 5 cfm vacuum pumps which are periodically operated in a manual mode during operation to maintain sub atmospheric conditions within the containment structure. The vacuum pumps are automatically isolated from the recombiners on a containment isolation signal. The design of the existing redundant hydrogen recombiner system is single failure proof. The Hydrogen Recombiner System is described in Section 6.5 of the FSAR for Beaver Valley. The existing design meets the requirements of GDC54 and GDC56 with the exceptions noted in the Beaver Valley FSAR.

Section 2.1.5(c) - Capability to Install H_2 Recombiner

The Hydrogen Recombiners at Beaver Valley are permanently installed. These recombiners are started from a local control panel located with the recombiners.

The shielding and associated personnel limitations associated with the use of the recombiners are presently under review.

We shall prepare detailed operating procedures for the use of these recombiners which take into account the experience gained at TMI and consider personnel limitations that are identified in the shielding review.

The procedures shall be available prior to the post refueling start up in mid 1980.

Section 2.1.6(a) - Integrity of Systems Outside Containment Likely to Contain Radioactive Materials

A program to reduce leakage from systems outside containment that would, or could, contain highly radioactive fluids during a serious transient or accident condition is being prepared.

This program will include an examination of methods to reduce leakage potential release paths due to design and operator deficiencies as discussed in your letter of October 17, 1979.

This program will be instituted and fully implemented prior to returning the Beaver Valley Power Station to power operation following the extended refueling and modification outage.

Section 2.1.6(b) - Design Review of Plant Shielding and Environmental Qualification of Equipment for Spaces/Systems which May Be Used in Post Accident Operations

A review of plant shielding is being performed in accordance with the staff position as clarified. Any necessary plant or procedural modifications will be identified. All procedural modifications shall be implemented prior to the restart of the plant in mid 1980. A schedule for hardware or shielding changes shall be developed and forwarded. All possible plant modifications shall be completed by January 1, 1981.

Section 2.1.7(a) - Auto Initiation of the Auxiliary Feedwater System

Automatic/Manual Initiation of the Auxiliary Feedwater System is presently available at Beaver Valley. These circuits are presently tested periodically in accordance with the Beaver Valley, Unit No. 1 Maintenance Surveillance Test Program. All motor operated pumps and valves are included in the automatic sequencing of loads to the emergency buses. A failure of the automatic initiation circuitry will not result in a loss of manual start capability from the control room. Instrument air is not required for the operation of the auxiliary feedwater system at Beaver Valley.

Section 2.1.7(b) - Auxiliary Feedwater Flow Indications in Steam Generators

The Beaver Valley Power Station presently has control grade auxiliary feedwater flow indication to each steam generator. Each single channel instrument is backed up by a steam generator level indication. We are presently engaged in preliminary engineering to upgrade the auxiliary feedwater flow indication to safety grade. We are planning to complete this upgrade by December 31, 1980.

Section 2.1.8(a) - Improved Post Accident Sampling Capability

We are presently performing a comprehensive review of plant post accident sampling and analytical capabilities including the capability to perform chemical analysis of highly radioactive samples. Plant procedures for the handling and analysis of such samples and all possible plant modifications to facilitate the required capability will be completed prior to the restart of the plant in 1980. A schedule for the completion of all other modifications which have been determined to be necessary will be forwarded as soon as a schedule for these activities is developed. All requirements as described in the clarifications on pages 27 through 30 of Enclosure 1 to your October 30, 1979, letter will be addressed.

Section 2.1.8(b) - Increased Range of Radiation Monitors

Interim methods shall be developed to quantify high level radioactive releases which meet the requirements of Table 2.1.8.b.1 prior to the restart of the unit in mid 1980.

We are continuing with the preliminary engineering and discussions with equipment vendors necessary to place orders for the equipment required to comply with the staff position as clarified on pages 26 through 36 and Tables 2.1.8.6.2 and 2.1.8.b.3 of Enclosure 1 of your October 30, 1979, letter. We shall provide you with a schedule for the completion of the Category B requirements as soon as possible after the placement of purchase at which time the promised delivery dates of the equipment will be established.

Section 2.1.8(c) - Improved In-Plant Instrumentation Under Accident Conditions

Procedures shall be developed and implemented prior to the movement of fuel during the upcoming refueling to accurately determine airborne iodine concentration in areas within the facility where plant personnel may be present during an accident. This will be accomplished using portable iodine samplers equipped with silver zeolite cartridges. Counting shall be performed with a properly calibrated single channel analyzer or with a laboratory type multi channel analyzer. We are developing the capability to remove the sampling cartridge to a low background, low contamination area for further analysis in accordance with Clarification B to this staff position. We plan to have this completed by January 1, 1981.

1473 216

Containment Pressure Indication

We are proceeding with the activities necessary to procure and install an extended range containment pressure monitor. We plan to have this instrument installed by January 1, 1981.

Containment Water Level Indication

We are proceeding with the engineering and procurement activities necessary to comply with this requirement by January 1, 1981.

Containment Hydrogen Indication

We are proceeding with the engineering and procurement activities necessary to comply with this requirement by January 1, 1981.

Reactor Coolant System Venting

We shall install a reactor coolant system head venting system. We plan to pursue the details of the design of the venting system necessary to comply with the additional design considerations provided in your October 30 letter and the development of procedures addressing the use of the vent system on a generic basis through the Westinghouse Owners Group. It is not possible to accurately estimate the date by which this system can be designed and installed at this time. It is our considered opinion that a completion date of January 1, 1981, is extremely optimistic for the design, procurement and installation activities associated with this Safety Class I system.

Section 2.2.1(a) - Shift Supervisor Responsibilities

The Shift Supervisor's Responsibilities shall be reviewed and a management directive shall be issued by the Vice President of Operations by January 31, 1980. We are intentionally selecting this date in preference to the December 31, 1979, to provide a more reasonable date for the reissuance of an annual reenforcement of Company Policy and to assure that the performance of the annual review does not coincide with the end of the year period at which time numerous key personnel may be unavailable.

Section 2.2.1(b) - Shift Technical Advisor

We shall provide on shift, at all times that average temperature of the reactor coolant system is greater than 200°F, an On-Shift Technical Adivsor. This group of on-shift technical advisors shall have the responsibility for both accident assessment and an evaluation of operating experience. This review of operating experience will include a review of operating experiences at Beaver Valley as well as a review of abnormal operating experiences that occur at facilities of similar design which are brought to their attention through LERs, the Clearing House Reports or other means. This commitment shall become effective as of January 1, 1980.

1473 217

Section 2.2.1(c) - Shift and Relief Turnover Procedures

We shall review and revise, in accordance with the staff position, the plant procedures for shift and relief turnover. This review shall be completed by January 1, 1980.

Section 2.2.2(a) - Control Room Access

Administrative Procedures that establish the authority and responsibility of the person in charge of the Control Room to limit access and administrative procedures that establish a clear line of authority and responsibility in the Control Room in the event of an emergency shall be developed and implemented by January 1, 1980.

Section 2.2.2(b) - Onsite Technical Support Center

A temporary Onsite Technical Support Center shall be established in accordance with the staff position as clarified in your October 30, 1979, letter, prior to returning the unit to operation in mid 1980.

Our long range plan for upgrading the technical support center to meet all requirements will be submitted by February 28, 1980. This delay in the submittal of the long range plan is required to allow enough time for the completion of a review of the habitability requirements and, if necessary, the selection of a suitable site for a permanent technical support center. It is our goal to complete the installation of the permanent center, complete with necessary instrumentation and data transmission facilities by January 1, 1981. A detailed schedule for completion will be established by February 28, 1980.

Section 2.2.2(c) - Onsite Operation Support Center

An onsite operational Support Center, in accordance with the requirements of the staff position, shall be established prior to returning the unit to operation in mid 1980.

Very truly yours,

C. N. Dunn
Vice President, Operations

1473 218