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JUNE 15 1979

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Docket Nos. 50-280
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Mr. W. L. Proffitt
Senior Vice President - Power
Virginia Electric and Power Company
P. O. Box 26666
Richmond, Virginia 22261

Dear Mr. Proffitt:

I enclose for your information a copy of petition filed on behalf of the Potomac Alliance and others which requests that an order be issued to suspend further action on the Surry Power Station's steam generator repair program pending preparation of an Environmental Impact Statement and completion of other requested action. The petition is being treated under 10 CFR 2.206 of the Commission's regulations, and accordingly, appropriate action will be taken on the petition within a reasonable time. I also enclose for your information a copy of the notice that will be filed for publication with the Office of the Federal Register.

Sincerely,

Original Signed by
N. R. Denton

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Enclosures:
As Stated

cc: w/enclosures
See next page

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VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

June 15, 1979

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

Serial No. 490
PSE&C/CMRjr:mac:wang

Docket Nos. 50-280
50-281

License Nos. DPR-32
DPR-37

Dear Mr. Denton:

SCHEDULE AND SUPPORT INFORMATION
REANALYSIS OF PIPING SYSTEMS
SURRY POWER STATION UNIT 1

On June 13, 1979 members of the Nuclear Regulatory Commission staff requested additional information with regard to the pipe stress reanalysis effort at Surry Power Station Unit 1.

Three attachments to this letter give our responses to the questions as requested. The three responses are as follows:

Attachment 1 - (Functional Description of Support Types at Surry Power Station Unit 1) - This attachment details types of supports, their function and design load capability information.

Attachment 2 - (Schedule Information for Surry Power Station Unit 1) - This attachment describes the schedule commitments necessary for an orderly and thorough reanalysis effort.

Attachment 3 - (Reactor Coolant Pressure Boundary Support Information Surry Power Station Unit 1) - This attachment presents available information on all those supports associated with the reactor coolant pressure boundary previously analyzed with SHOCK II.

The present sampling program for IE Bulletin 79-02 as stated in our June 8, 1979 letter (Vepco Serial No. 458) was initiated to determine if those anchor bolts installed are capable of performing their intended function. An analysis of the data collected to date has proven inconclusive. The program is now being modified to obtain more conclusive data. Data collection activities for a modified program will be complete on or about June 20, 1979. Evaluation of data collected so far has not shown the bolts to be incapable of performing their intended function.

A001
S 1/1
Add: W. Russell

If you should desire other information, please contact us as soon as possible.

Very truly yours,

W. C. Spencer
Vice President - Power Station
Engineering and Construction Services

Attachments (3)

Functional Description of Support Types at Surry Power Station Unit 1

The following definitions of hanger types have been extracted from TID 25553, dated December 1970, Survey Report on Structural Design of Piping Systems and Components, published by O.R.N.L.:

PIPING SYSTEM SUPPORTING ELEMENTS

The control of the motion of piping systems is an important consideration in design. The term, "supporting elements", is used in the USAS Piping Code, and herein, as including any device which prevents, resists or limits the movement of the piping. The following terminology is used herein:

Brace A device primarily intended to resist displacement of the piping due to the action of any forces other than those due to thermal expansion or to gravity. Note that with this definition, a damping device is classified as a kind of brace.

Anchor A rigid restraint providing substantially full fixation (i.e., encastre; ideally permitting neither translatory nor rotational displacement of the pipe on any of the three reference axes). It is employed for purposes of restraint but usually serve equally well as restraint, support or brace. Note: Additional information on anchors is found at the end of this write up.

Stop A device which permits rotation but prevents translatory movement in at least one direction along any desired axis. If translation is prevented in both directions long the same axis, the term double-acting stop is preferably applied.

Two-axis Stop A device which prevents translatory movement in one direction along each of two axes. A two-axis double-acting stop prevents translatory movement in the plane of the axes while allowing such movement normal to the plane.

Limit Stop A device which restricts a translatory movement to a limited amount in one direction along any single axis. Paralleling the various stops there may also be: double-acting limit stops, two axis limit stops, etc.

Guide A device preventing translatory displacements except along the pipe axis.

Rotational Guide A device preventing rotational displacements about one or more axes.

Hanger A support by which piping is suspended from a structure, etc., and which functions by carrying the piping load in tension.

Resting or Sliding Support A device providing support from beneath the piping but offering no resistance other than frictional to horizontal motion.

Inextensible Support A support providing stiffness in at least one direction comparable to that of the pipe.

Resilient Support A support which includes one or more largely elastic members (e.g., spring).

Constant Support A support which is capable of applying a relatively constant force at any displacement within its useful operating range (e.g., counterweight or compensating spring device).

Damping Device A dashpot or other frictional device which increases the damping of a system offering high resistance against rapid displacement caused by dynamic loads, while permitting essentially free movement under gradually applied displacements. (Note: Also called snubber or shock suppressor.)

The design of restraints is intimately connected with the piping flexibility analysis. In fact, for an accurate flexibility analysis, it is necessary to establish and use as input, the locations and functions of the various restraints. The flexibility analysis then indicates what loads must be sustained by the supporting elements.

Not all of the above definitions are used at Surry.

LOCA supports for pipe would be either non-contact small gap device or devices such as snubbers which are connected to the pipe and become rigid only when sudden loads are applied. These devices are used to limit travel of the pipe which they control to distances which do not cause excessive stress or strain on adjoining pipe or equipment.

A thermal support is used principally to control the direction of growth of pipe when it heats up so that it will behave in the same manner as it is considered when the stress analysis is done.

All supports resist loads from multiple contributing factors so all supports can be considered as doing double duty. Supports are analyzed for a variety of load combinations that may occur as committed to in the Safety Evaluation Report. These loads are mathematically combined to arrive a a total design load which the hanger is designed to resist.

The function of an anchor during an earthquake or LOCA is to maintain the pipe at the point of the anchor in a fixed relationship to the building at that point. An anchor functions against forces in all directions and rotation moments in all directions simultaneously. This merely makes it more universal than other restraints. All supports are not anchors because sufficient flexibility must be provided in the piping system to permit thermal expansion and not overload equipment nozzles.

The steam generator supports are classified as equipment supports, so are analyzed to a different code than pipe supports. They do function during an earthquake and during a LOCA, or during the postulated combination of the two events. They serve to support and maintain the steam generators in position relative to the reactor pressure vessel or the reator coolant pumps.

Schedule Information for Surry Power Station Unit 1

Our letter of June 8, 1979 (Vepco Serial No. 458) included an Attachment III which indicated scheduled completion dates for pipe stress reanalysis and supports reanalysis for each problem. The latest date shown on that schedule is September 16, 1979 for completion of reanalysis of supports for a SHOCK 0 residual heat removal problem.

Each of the dates contained in Attachment 3 of the June 8 letter was arrived at considering the necessity for a thorough and complete reanalysis that would stand up under intense scrutiny. There are major milestone dates, however, that occur prior to the September 16, 1979 completion date. One such date is August 15, 1979. On August 15, 1979 we believe we will be able to identify any remaining major modifications for supports. The analysis will not be complete in that subsequent refinements may be able to reduce the extent of modifications in general and minor modifications specifically. The use of August 15, 1979 as a target date would apply only to SHOCK II support reanalysis and evaluation of the adequacy of supports, and would not include Engineering Assurance approval and redesign of supports requiring modification.

We will continue to expedite the reanalysis work commensurate with the safety concerns expressed above. We commit to identify all major modifications by August 15, 1979 as stated above. Refinements in analysis to reduce the number of modifications, and continued documentation efforts for Engineering Assurance may extend beyond August 15, 1979. No reanalysis is anticipated to extend beyond the September 16, 1979 date previously established.

Reactor Coolant Pressure Boundary Supports
Surry Power Station Unit 1

The attached Table 1 gives a breakdown of available information as of June 13, 1979 on the supports for the reactor coolant pressure boundary. Support types are broken down by category. These problems were originally analyzed using SHOCK II.

Start up will not commence until all supports associated with the reactor coolant pressure boundary (originally analyzed using SHOCK II) have been reviewed in sufficient detail to determine if major modifications are required. Any major modifications identified will be installed prior to start up. This will assure that the integrity of the reactor pressure boundary is secure with respect to the Order to Show Cause while analyses are completed on remaining systems. At the present time, we have no reason to believe that additional modifications of any significance will be required.

TABLE 1

REACTOR COOLANT PRESSURE BOUNDARY
STATUS OF SUPPORTS

TYPE OF SUPPORT	TOTAL NO. SHOCK II	TOTAL COMPLETE	TOTAL UNDER REVIEW
SNUBBER	17	6	11
VERT. SUPT. (R.H., MONOBALL)	10	10	0
SPRING	23	23	0
ANCHOR	4	0	4
RESTRAINT (V.C., L.C., AXIAL)	13	7	6
TOTALS	67	46	21

Total support status for problems (to second isolation valve): 630, 707A, 1020A, 1000A, 636, 1010A, 508, 555, 708, 1555, and 706.