

PRESERVICE INSPECTION REPORT

of the

SURRY UNIT NO. 1 NUCLEAR POWER STATION
P.O. BOX 315
SURRY, VIRGINIA 23883

For

Virginia Electric and Power Company
P.O. Box 26666
Richmond, Virginia 23261

REPORT DATE: JULY 1981
COMMERCIAL SERVICE DATE: DECEMBER 22, 1972
OPERATING CAPACITY: 822 MWE

Performed By:
Virginia Electric and Power Company
Surry Power Station
NDT Department
P.O. Box 315
Surry, Va. 23883

8110060241 811002
PDR ADOCK 05000280
Q PDR

FORM NIS-1 (back)

8. Examination Dates 3/1/81 to 7/5/81 9. Inspection Interval from 12/22/72 to 12/22/82

10. Abstract of Examinations. Include a list of examinations and a statement concerning status of work required for current interval. Reference Tab C

11. Abstract of Conditions Noted Reference Tab B

12. Abstract of Corrective Measures Recommended and Taken Reference Tab B

We certify that the statements made in this report are correct and the examinations and corrective measures taken conform to the rules of the ASME Code, Section XI.

Date 18 SEPTEMBER 19 81 Signed VEPCO By [Signature] Owner ENGINEERING SUPERVISOR OF N. D. T.

Certificate of Authorization No. (if applicable) N/A Expiration Date N/A

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of Virginia and employed by The Hartwood Steam Air of Hartford Conn ^{TAB 8001} have inspected the components described in this Owners' Data Report during the period 3/1/81 to 7/5/81, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owners' Data Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owners' Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 9/22 19 81

[Signature] Commissions NB-8549, VA-280
Inspector's Signature National Board, State, Province and No.

FORM NIS-1 OWNERS' DATA REPORT FOR INSERVICE INSPECTIONS

As required by the Provisions of the ASME Code Rules

1. Owner Virginia Electric And Power Company P.O. Box 26666, Richmond, VA, 23261
(Name and Address of Owner)

2. Plant Surry #1, P.O.Box 315, Surry, Virginia 23883
(Name and Address of Plant)

3. Plant Unit 1 4. Owner Certificate of Authorization (if required) N/A

5. Commercial Service Date 12/22/72 6. National Board Number for Unit N/A

7. Components Inspected

Component or Appurtenance	Manufacturer or Installer	Manufacturer or Installer Serial No.	State or Province No.	National Board No.
Reactor Vessel	Rotterdam	RCPCRV 137-1	- - -	- - -
R. V. Internals	Allis-Chalmers	RCRIUI RCRILI	- - -	- - -
Pressurizer	Westinghouse	RCPCPR	- - -	1031
St. Gen. 1	Westinghouse	2981	- - -	681
St. Gen. 2	Westinghouse	2982	- - -	682
St. Gen. 3	Westinghouse	2983	- - -	683
Reactor Coolant Piping	Southwest Fab. Co.	- - -	- - -	- - -
Class 1 Piping	Southwest Fab. Co.	- - -	- - -	- - -
Class 2 Piping	Southwest Fab. Co.	- - -	- - -	- - -
R.C. Pump 1	Westinghouse	458	- - -	- - -
R.C. Pump 2	Westinghouse	459	- - -	- - -
R.C. Pump 3	Westinghouse	460	- - -	- - -
Valve 1-595	Darling	- - -	- - -	- - -
Valve 1-700	Copes Vulcan	- - -	- - -	- - -
Valve 1-875D	Darling	- - -	- - -	- - -
RHR HX 1A	Atlas Industrial	890	- - -	740

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. x 11 in., (2) information in items 1 through 6 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

V1
4

FORM NIS-1 OWNERS' DATA REPORT FOR INSERVICE INSPECTIONS

As required by the Provisions of the ASME Code Rules

1. Owner Virginia Electric And Power Company P.O. Box 26666, Richmond, VA. 23261
 (Name and Address of Owner)

2. Plant Surry #1, P.O.Box 315, Surry, Virginia 23883
 (Name and Address of Plant)

3. Plant Unit 1 4. Owner Certificate of Authorization (if required) N/A

5. Commercial Service Date 12/22/72 6. National Board Number for Unit N/A

7. Components Inspected

Component or Appurtenance	Manufacturer or Installer	Manufacturer or Installer Serial No.	State or Province No.	National Board No.
RHR HX 1B	Atlas Industrial	891	- - -	741
Seal Water Heat Exch.	Joseph Oats & Sons	1817-2A	- - -	346
Regenerative HX	Sentry	4195-A3-7	- - -	369
		4195-A3-8		370
		4195-A3-9		371
Volume Control Tank	Richmond Eng.	L-8554	- - -	57783
Charging Pump 1A	Byron Jackson Pumps	- - -	- - -	- - -

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. x 11 in., (2) information in items 1 through 6 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

✓
5

A summary of the indications is as follows:

From all inspections performed for the preservice examination of Unit one no indications were found to be recordable.

Examinations

Examinations were conducted to review as much of the examination zone as was practical, within geometric, metallurgical and physical limitations. When the required examination volume or area could not be examined 100%, the examination was considered to be partial (PAR) and so noted. Generally, PAR's are noted at fitting-to-fitting assemblies (as explained under LIMITATIONS) and in areas where integrally welded supports, lugs, hangers, etc., preclude access to some part of the examination area.

Ultrasonic examinations that produced greater than reference level sensitivity from reflectors that are characteristic of metallurgical structure of the I.D./O.D. surfaces of an item were acknowledged for information only and were noted as such on that data sheets. Examples of areas that generally produce such geometric indications include:

- (1) I.D. weld prep or root and or the crown overlay or toe.
- (2) The I.D. radius of the tube sheet on the channel head to tube sheet weld of steam generators, when examining from the tubesheet side.
- (3) The metallurgical structure of cast materials.
- (4) Responses from the thread areas of bolting.

Geometric responses from these areas are characteristic of the examination and are not considered relevant for reporting length or depth.

Limitations

Some of the arrangements and details of the piping system and components were designed and fabricated before the access and examination requirements of Section XI of the 1974 Code could be applied; consequently some examinations are limited or not practical due to geometric configuration or accessibility. Generally these limitations exist at all fitting to fitting joints such as elbow to tee, elbow to valve, reducer to valve, etc. where geometry and sometimes surface condition preclude ultrasonic coupling or access for the required scan length.

The limitations exist to a lesser degree at pipe fitting assemblies, particularly where the weld is not ground flush with the pipe O.D. surface. At these joints examinations can be conducted from the pipe side, however, the fitting again limits or precludes examination from the opposite side. When the weld surface is flat, the fitting side examination is replaced by a calibrated straight beam examination on the weld.

In most cases, examinations in these areas were accomplished as a best effort attempt to cover as much of the code required area or volume (generally, the weld and base metal for 1 "T" on each side) as is possible, however, the extent of examination coverage in the base metal of the fitting or component cannot be specifically qualified.

Areas where complete examination of 100% of the required volume or area could not be achieved are indicated by a PAR (partial) notation on the examiner's data sheet, and the limiting cause is noted.

The principal basis for PAR's is to identify the inability to examine 100% of the required base metal volume for the 1 "T" distance beyond the edge of the weld on a fitting or component, such as: ultrasonic examination of a pipe to elbow assembly, where scanning on the intrados of the elbow causes de-coupling of the sound beam; or a pipe to flange or valve assembly, where scanning the entire volume on the fitting or component side is limited by configuration.

The resulting coverage is such that examination of the weld, heat affected zone and base metal for 1 "T" on the pipe side can be achieved by scanning from the pipe side of the weld. An indeterminate coverage of the base metal on the fitting or component side may be achieved during this pipe side scan depending on the calibrated sweep length, attenuation, joint configuration, etc.; however, the volume on the fitting or component side additionally cannot be scanned completely for transverse indications as required by Code. In either case, 100% of this 1 "T" volume cannot be assured, thus a PAR is required as a disclaimer to having satisfied code requirements, albeit the intent is satisfied to the extent practical.

Specific limitations and restrictions for all examinations are as indicated on the raw data sheets.