PHILADELPHIA ELECTRIC COMPANY

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June 4, 1984

Docket Nos. 50-277
50-278

Mr. Darrell G. Eisenhut, Director
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUBJECT: Generic Letter 84-11, "Inspections of BWR Stainless Steel Piping"

Dear Mr. Eisenhut:

The subject Generic Letter dated April 19, 1984, requires Philadelphia Electric Company's response for additional inspection and leakage monitoring requirements as a result of intergranular stress corrosion cracking (IGSCC) in large diameter recirculation and residual heat removal systems piping. Actions required in accordance with the Generic Letter are as restated below along with our response for Peach Bottom Units 2 and 3.

Unit 2

(a) Scope and schedule of planned inspections

Response

On March 6, 1984, Philadelphia Electric Company submitted plans for recirculation and residual heat removal (RHR) system piping replacement (S. L. Daltroff, PECo, to J. F. Stolz, USNRC, letter). The outage to perform this work is in progress, having started on April 28, 1984. The scope of the modification is to replace the entire recirculation system, the RHR shutdown cooling piping out to, but not including penetrations, a portion of the RHR head spray piping and the reactor water cleanup (RWCU) penetration and a portion of its piping outside containment with Type 316 (controlled chemistry) stainless steel having low carbon (0.02% max) and nitrogen (0.1% max) content. The RWCU and

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portions of the core spray piping inside containment have previously been replaced with Type 316L stainless steel.

The new piping conforms to the guidelines stated in Part III of NUREG-0313, Rev. 1, for corrosion resistant material. Therefore, in accordance with Part IV A of NUREG-0313, Rev. 1, no augmented inservice inspection beyond the requirements of 10 CFR 50.55a(g), Inservice Inspection Requirements (ISI), will be required subsequent to these piping modifications. Future inspections after performance of baseline UT examinations following modifications will be performed in accordance with the second 120-month ISI program for Peach Bottom Unit 2.

Unit 3

(a) Scope and schedule of planned inspections.

Response

The reinspections specified below will be performed during the next Unit 3 refueling outage currently scheduled to begin March 30, 1985. Recirculation and RHR system inspections were previously performed during the summer of 1983. Based on results of those inspections, the scope of the reinspections is as follows in accordance with items 2a through 2e of the Generic Letter. Attachments 1 and 2 depict the Unit 3 Recirculation and RHR System.

(1) 20% of non-conforming welds in each pipe size not previously inspected

Recirculation System

- 12-inch risers - All non-conforming welds were previously inspected. Therefore, no riser welds will be reinspected during the next outage.

- 22-inch manifold - Two welds were not inspected previously. These two welds, 2-BM-2 and 2-BM-3 will be inspected during the next outage.

- 28-inch discharge and suction - Eight welds were not inspected previously. The following welds will be inspected during the next outage:

  2-AS-9
  2-AD-13
  2-BS-8
  2-BD-16

RHR System

- 24-inch return - Two welds were not inspected previously. Welds 10-1A-2 and 10-1B-2 are not inspectable due to their configuration and cannot be inspected during the next outage.

(2) 20% of non-conforming welds in each pipe size inspected previously with no indications:

Recirculation System

- 12-inch risers - Thirty welds previously inspected had no indications. The following welds will be inspected during the next outage:

2-AHK-1	2-BHE-1
2-AHH-1	2-BHC-1
2-AHF-3	2-BHA-3

- 22-inch manifold - Eight welds previously inspected had no indications. The following welds will be inspected during the next outage:

  2-BM-4
  2-AM-5

- 28-inch discharge and suction- Twenty-five welds previously inspected had no indications. The following welds will be inspected during the next outage:

2-AS-5 2-BS-6
2-AD-17 2-BD-15
2-BS-4

RHR System

- 20-inch suction - Ten welds were previously inspected with no indications. The following welds will be inspected during the next outage:

  10-0-3
  10-0-12

- 24-inch return - Nineteen welds were previously inspected with no indications. The following welds will be inspected during the next outage:

  10-1A-7 10-1B-4
  10-1A-10 10-1B-11

(3) All unrepaired cracked welds

All welds with crack indications were weld overlay repaired during the Summer 1983 outage. Therefore, since there are no known unrepaired weld locations with indications, this item is not applicable.

(4) Inspection of all weld overlays where circumferential cracks longer than 10% of circumference were measured.

All crack indications in the 12-inch risers were axial in configuration. All crack indications in the RHR system were circumferential in configuration with indications greater than 10% of the circumference. Therefore, the following welds will be inspected during the next outage:

10-0-5
10-0-6
10-0-7
10-0-10
10-1-15

(5) Welds previously treated by Induction Heating Stress Improvement (IHSI) that had not been UT acceptance tested.

A total of ninety-one welds in the recirculation and RHR systems were IHSI treated and all of these welds have had post treatment UT inspections performed. Therefore, no IHSI treated welds will be reinspected during the next outage.

(6) If during the reinspections to be performed as indicated above, new cracks or significant growth of old cracks are detected, as defined in the generic letter, the scope of inspections will be expanded for the size of the pipe in which cracks were found in accordance with I.E. Bulletin 83-02.

Unit 2

(b) Availability and qualification of examiners.

Response

Southwest Research Institute is under contract by Philadelphia Electric Company to perform the UT inspections as part of Peach Bottom Unit 2 Inservice Inspections. Southwest Research Institute personnel are available on an as-needed basis. As discussed in Philadelphia Electric Company's response to I.E. Bulletin 83-02, S. L. Daltroff (PECo) to Dr. T. E. Murley (NRC), "Supplement to Peach Bottom Unit 2 Response to I.E. Bulletin No. 83-02", dated October 19, 1983, Southwest Research Institute validated their UT detection capability in accordance with the requirements of Action Item 1 of I.E. Bulletin 83-02 at the EPRI NDE Center on April 14 and 15, 1983.

Unit 3

(b) Availability and qualification of examiners.

Response

Southwest Research Institute is under contract by Philadelphia Electric Company to perform the UT inspections as part of Peach Bottom Unit 3 Inservice Inspections. Southwest Research Institute personnel are available on an as-needed basis. As discussed in Philadelphia Electric Company's response to I. E. Bulletin 83-02, S. L. Daltroff (PECo) to Dr. T. E. Murley (NRC), "Peach Bottom Unit 3 Response to I.E. Bulletin No. 83-02", dated August 9, 1983, Southwest Research Institute validated their UT detection capability in accordance with the requirements of Action Item 1 of I.E. Bulletin 83-02 at the EPRI NDE Center on April 14 and 15, 1983.

Unit 2

(c) Description of any special surveillance measures, in effect or proposed, for primary system leak detection, beyond those measures already required by your Technical Specifications.

Response

Philadelphia Electric Company, to assure the safe operation of Peach Bottom Unit 2 and to provide for the detection of small primary system leakage, has implemented an additional surveillance measure for primary system leak detection. This system consists of moisture detection devices placed on five weldolet to pipe welds not examined due to configuration and two valve to penetration welds unexaminable due to configuatrion. In addition, five additional welds were instrumented with Moisture Detection Devices. These welds were discovered to contain circumferential indications during UT examination, but these indications were determined to be acceptable for full power operation until the current outage, which began on April 28, 1984. This system is described in detail in Attachment G, "Identification of Placement of Leak Detection Devices and Monitoring of These Devices to Assure Safe Operation of Plant", of the October 19, 1983, letter response, S. L. Daltroff (PECo) to Dr. T. E. Murley (NRC), "Supplement to Peach Bottom Unit 2 Response to I.E. Bulletin No. 83-02."

In addition, as discussed in Philadelphia Electric Company's letter response of September 15, 1983, J. S. Kemper (PECo) to Dr. T. E. Murley (NRC), "Peach Bottom Unit 2 Response to I.E. Bulletin No. 83-02", Philadelphia Electric Company will report all moisture detection system problems and alarms unrelated to actual leakage on a 30-day basis. This moisture detection system is used for the detection of small primary system leakage.

A decision as to the extent of the use of moisture detection devices following the Unit 2 pipe replacement has not yet been made. The need for such devices is currently being studied.

Unit 3

(c) Description of any special surveillance measures, in effect or proposed, for primary system leak detection, beyond those measures already required by your Technical Specifications.

Response

Philadelphia Electric Company, to assure the safe operation of Peach Bottom Unit 3 and to provide for the detection of

small primary system leakage, has implemented an additional surveillance measure. This system consists of moisture detection devices placed on three welds in the RWCU system that were not examined. In addition, all fifteen welds repaired during the 1983 refuel outage, five weldolet to pipe welds not examined due to configuration, ten welds not examined because they were in high radiation areas and two isolatable welds, one each in both the "A" and "B" residual heat removal return penetration. These moisture detectors are part of a system operated as stated in Attachment III to the May 23, 1983, letter, S. L. Daltroff (PECo) to D. G. Eisenhut per letter response of September 15, 1983, J. S. Kemper (PECo) to Dr. T. E. Murley (NRC), "Peach Bottom Unit 2 Response to I.E. Bulletin No. 83-02. This system is further described in detail in the previously mentioned Attachment G to "Supplement to Peach Bottom Unit 2 response to I.E. Bulletin No. 83-02", dated October 19, 1983. Any problems and alarms in the Unit 3 moisture detection system unrelated to actual leakage will be reported on a 30-day basis.

After the planned inspections, as described above during the next outage on Unit 3, the locations of the existing moisture detection devices will be re-evaluated and adjusted as necessary.

Unit 2

(d) Results of the Bulletin inspections not previously submitted to the NRC.

Response

Philadelphia Electric Company's letter response of February 21, 1984, S. L. Daltroff (PECo) to Dr. T. E. Murley (NRC), "Supplement IV to Peach Bottom Unit 2 Response to I.E. Bulletin No. 83-02", completed Philadelphia Electric Company's Unit 2 response to the NRC pertaining to I.E. Bulletin No. 83-02.

Unit 3

(d) Results of the Bulletin inspections not previously submitted to the NRC.

Response

Philadelphia Electric Company's letter response of August 30, 1983, S. L. Daltroff (PECo) to Dr. T. E. Murley (NRC), "Supplement II to Peach Bottom Unit 3 Response to I.E. Bulletin No. 83-02", completed Philadelphia Electric

Company's Peach Bottom Unit 3 response to the NRC pertaining to I.E. Bulletin No. 83-02.

Unit 2

(e) Remedial measure, if any, to be taken when cracks are discovered.

Response

As described in response to item (a) above, piping susceptible to IGSCC is being replaced during the current outage.

Unit 3

(e) Remedial measures, if any, to be taken when cracks are discovered:

Response

As stated in response to (a), if new cracks or significant growth of old cracks are found, the scope of inspections will be expanded in accordance with I.E. Bulletin 83-02.

Any new crack indications will be evaluated and analyzed for further operation and/or repaired as required on a case-by-case basis. Crack evaluations will be performed in accordance with section IWB 3600 of Section XI of the ASME Boiler and Pressure Vessel Code.

Very truly yours,

cc: A. R. Blough, Site Inspector

COMMONWEALTH OF PENNSYLVANIA :

: ss.

COUNTY OF PHILADELPHIA :

S. L. Daltroff, being first duly sworn, deposes and says:

That he is Vice President of Philadelphia Electric Company; that he has read the foregoing response to Generic Letter 84-11 and knows the contents thereof; and that the statements and matters set forth therein are true and correct to the best of his knowledge, information and belief.

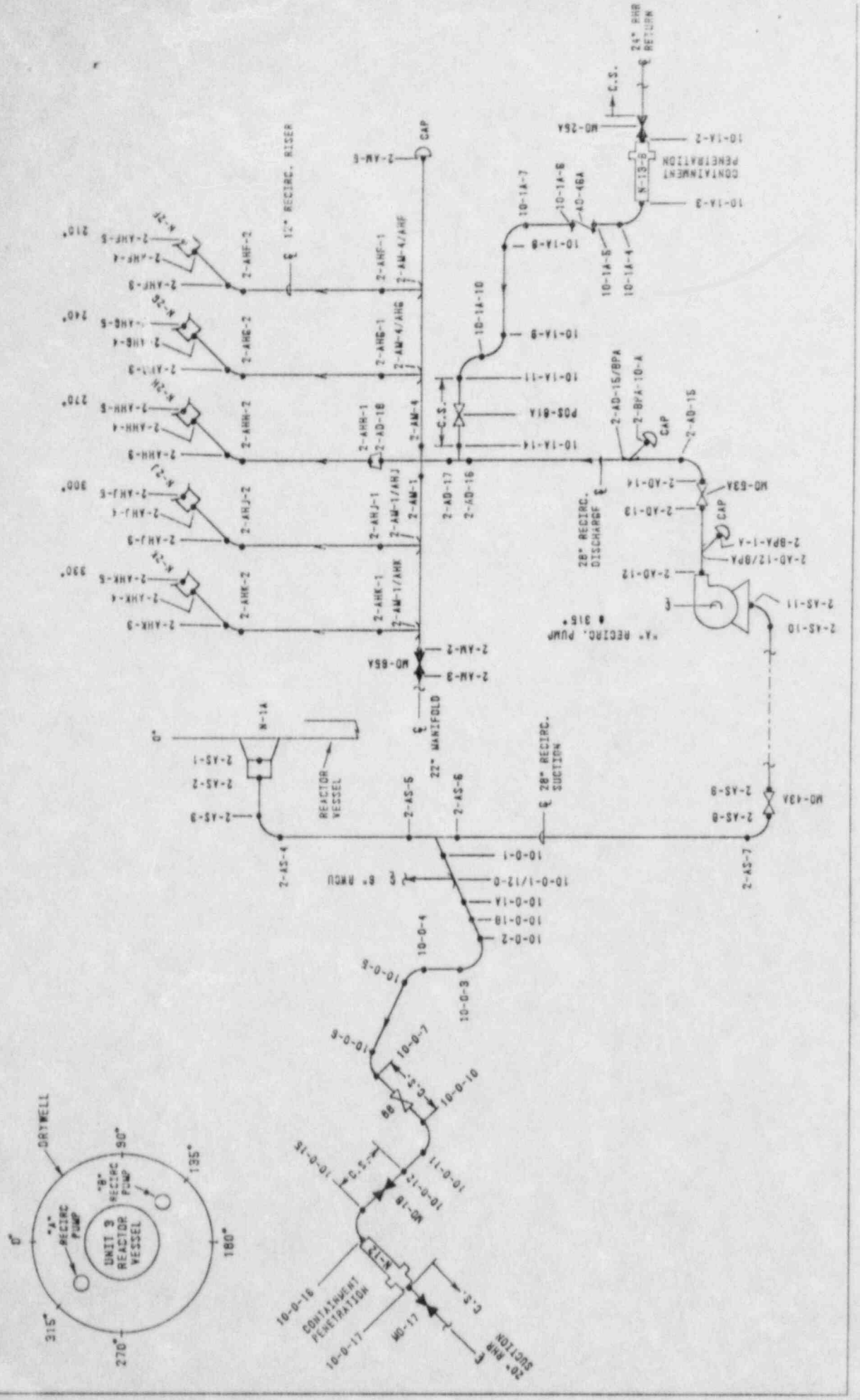
S L Daltroff

Subscribed and sworn to
before me this 4th day
of June, 1984

Patricia A Jones

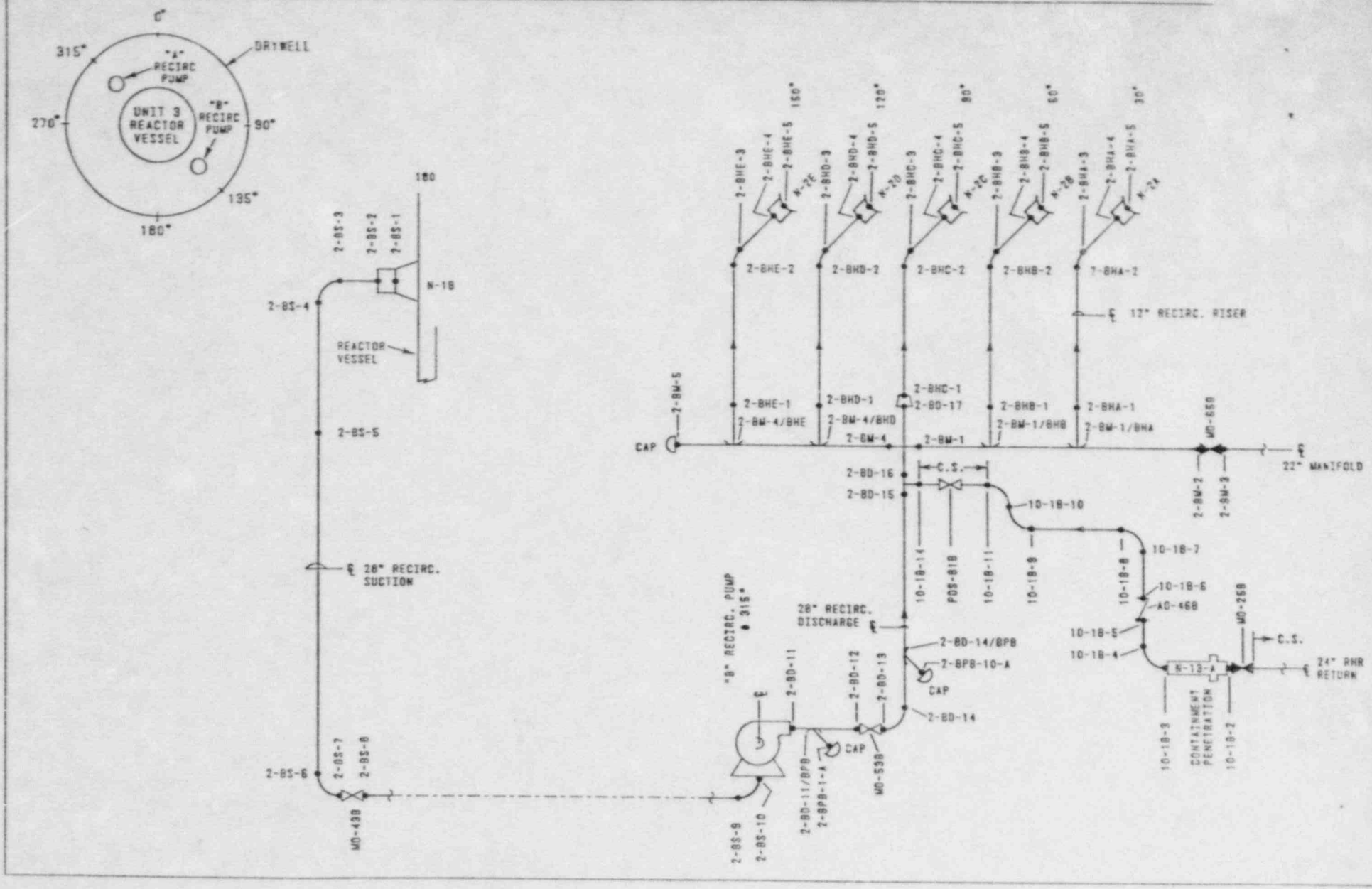
Notary Public

PATRICIA A. JONES
Notary Public, Phila., Phila. Co.
My Commission Expires Oct. 13, 1986



ATTACHMENT 1

ATTACHMENT 2



REAR'S-UNIT 3 "B" RECIRCULATION PIPING & RHR SHUTDOWN COOLING SUCTION/RETURN PIPING