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 FACIL: 50-397 WPPSS NUCLEAR PROJECT, UNIT 2, WASHINGTON PUBLIC POWE 05000397
 AUTH. NAME: RENBERGER, D.L. AUTHOR AFFILIATION: WASHINGTON PUBLIC POWER SUPPLY SYSTEM
 RECIP. NAME: VARGA, S.A. RECIPIENT AFFILIATION: LIGHT WATER REACTORS BRANCH 4

SUBJECT: REACTOR RECIRCULATION INLET NOZZLE SAFE ENDS ARE BEING REPLACED W/SA-182 GR F, 316 L MATL, W/NITROGEN ADDED TO ENHANCE STRENGTH. FORWARDS CONFORMANCE OF WNP-2 TO POSITIONS IN NUREG-0313 REVISION 1.

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 TITLE: PSAR/FSAR AMDTS AND RELATED CORRESPONDENCE.

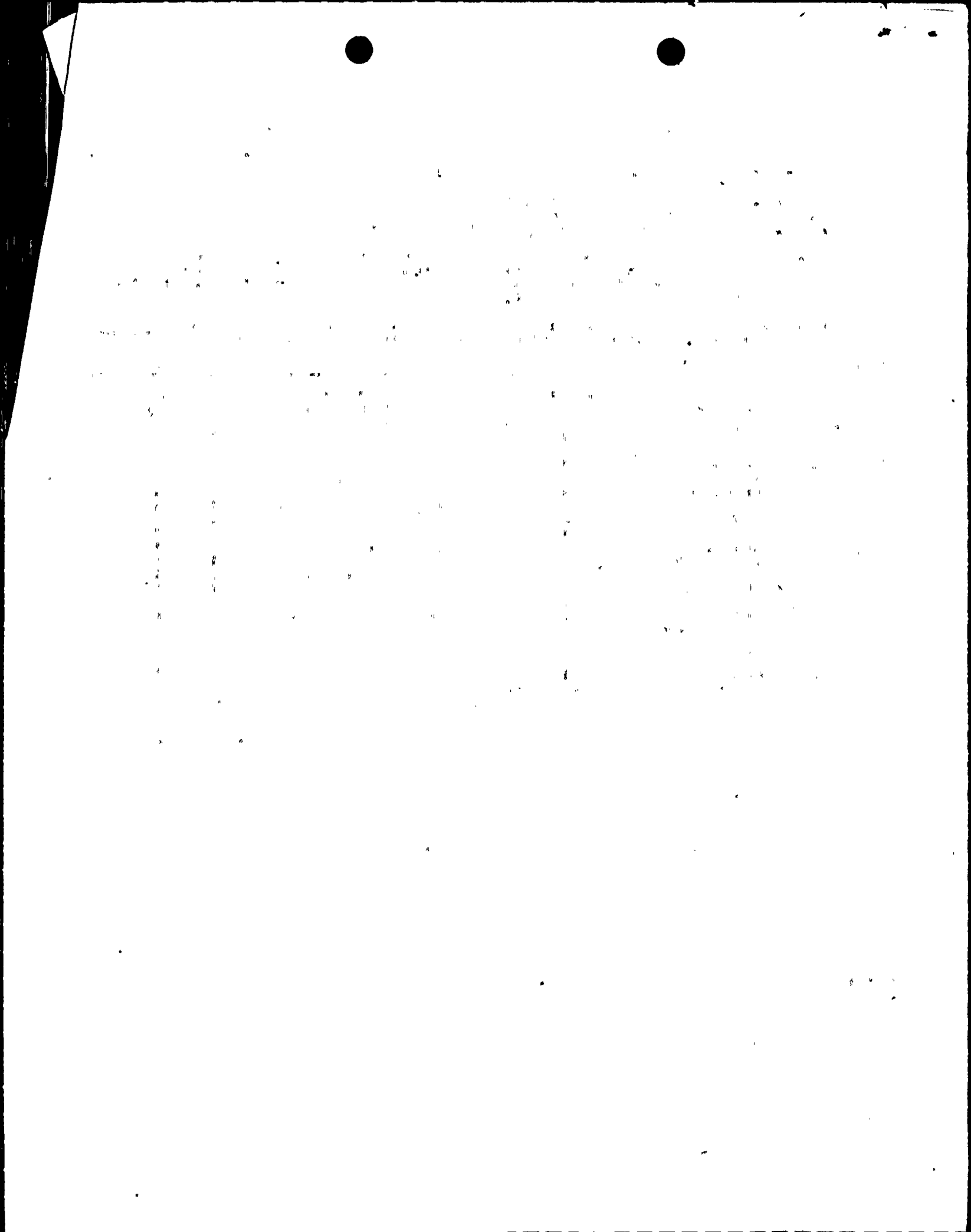
NOTES: BILL PATON (OELD) ICY ER AMDTS. PM-2 CYS ALL MATL.

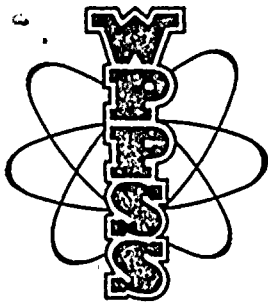
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	AD PLANT SYS	1	0	AD REAC SAFETY	1	0
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Washington Public Power Supply System
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G02-79-71
April 17, 1979

Docket No. 50-397

Mr. S. A. Varga, Chief
Light Water Reactor Branch No. 4
Division of Project Management
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Subject: WPPSS NUCLEAR PROJECT NO. 2
MATERIAL INFORMATION UPDATE

Reference: 1)WNP-2 PSAR Question 4.8, January 20, 1972
2)G02-78-164, dated June 26, 1978

Dear Mr. Varga:

The response to reference 1 is no longer correct. The WNP-2 reactor recirculation inlet nozzle safe ends are being replaced with SA-182 Gr. F, 316 L material, with nitrogen added to enhance the strength properties. This material is highly resistant to oxygen-assisted stress corrosion cracking in the as-installed condition. Due to the low carbon content, it being furnished in the solution heat-treated condition, and limited heat input (<50,000 J/in.), the material cannot be severely sensitized.

The attachment to this letter, Conformance of WNP-2 to Positions in NUREG-0313 Rev. 1, serves as an update to Parts II and III of our response to NUREG-0313, refer to reference 2.

Very truly yours,

D. L. RENBERGER
Assistant Director
Technology

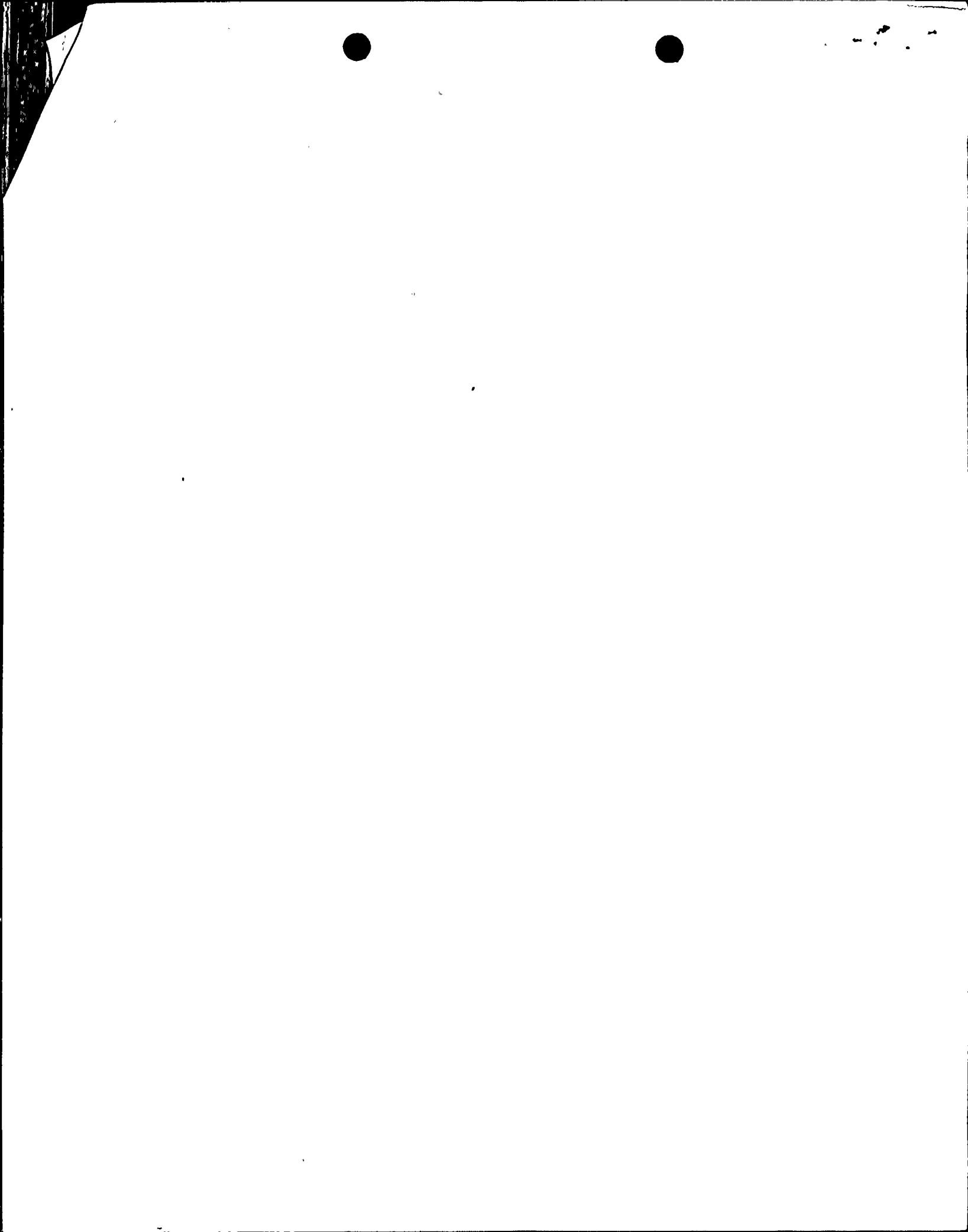
DLR:DCT:cd

Attachment: as stated (40)

cc: JJ Verderber, B&R
RC Root, B&R Site
JJ Byrnes, B&R
CR Bryant, BPA
JG Davis, NRC, Washington D. C.
WNP-2 Files

Book
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STATE OF WASHINGTON)
COUNTY OF BENTON) ss

D. L. RENBERGER, Being first duly sworn, deposes and says: That he is the Assistant Director, Technology, for the WASHINGTON PUBLIC POWER SUPPLY SYSTEM, the applicant herein; that he is authorized to submit the foregoing on behalf of said applicant; that he has read the foregoing and knows the contents thereof; and believes the same to be true to the best of his knowledge.

DATED April 13, 1979

D. L. Renberger
D. L. RENBERGER

On this day personally appeared before me D. L. RENBERGER to me known to be the individual who executed the foregoing instrument and acknowledged that he signed the same as his free act and deed for the uses and purposes therein mentioned.

GIVEN under my hand and seal this 13th day of April, 1979.

Reba S. Helgen
Notary Public in and for the State
of Washington
Residing at Richland

Conformance of WNP-2 to
Positions in NUREG-0313
Revision 1

WNP-2 austenitic stainless steel pipe and fittings (Type 304) to which NUREG-0313 applies consist of the following:

- o the reactor recirculation (RRC) system loops,
- o the residual heat removal (RHR) system shutdown cooling suction and return lines from the RRC system loops to the inner containment isolation valve or check valves, and
- o the RRC to reactor water cleanup system inerties.

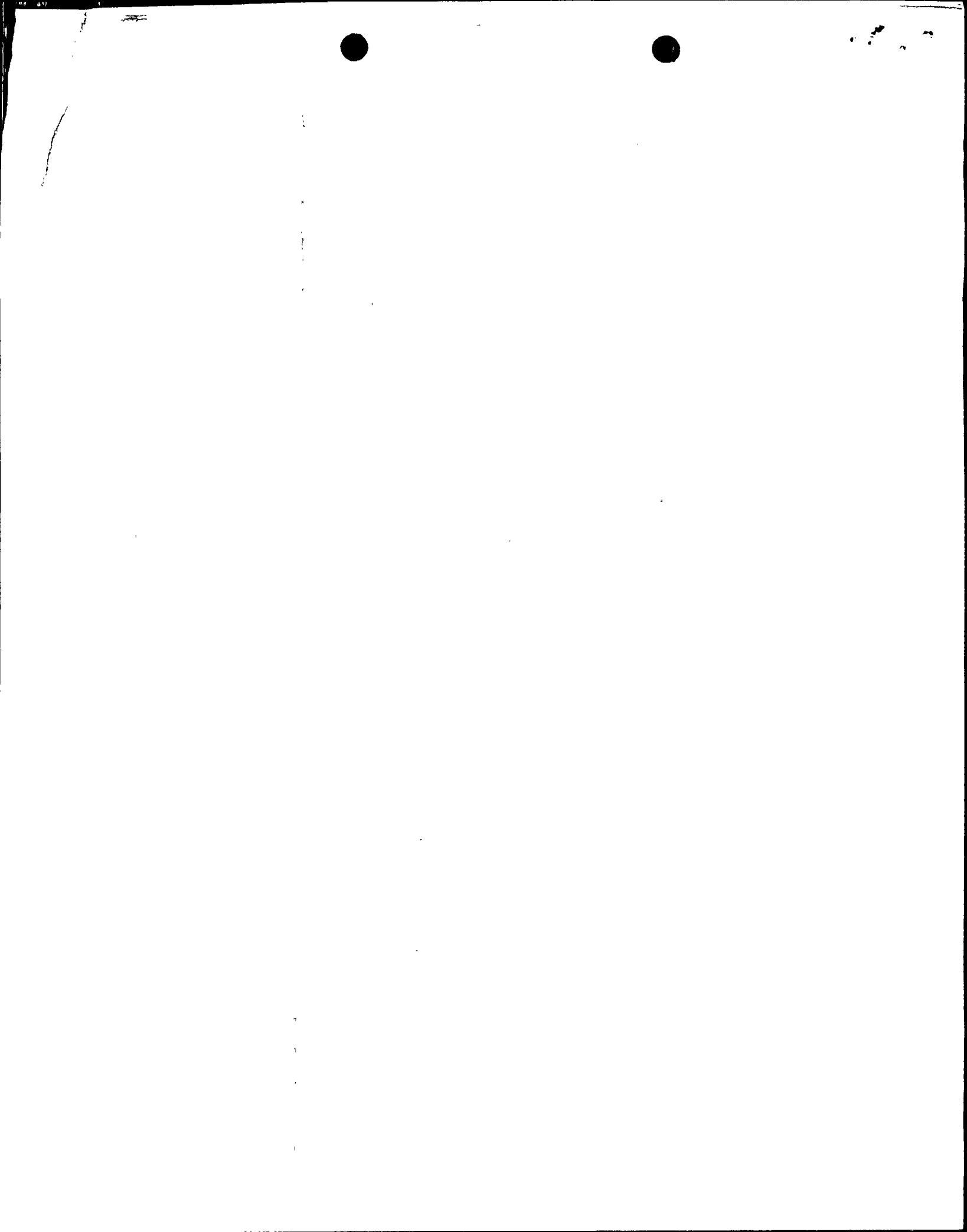
Conformance to Parts II and III of NUREG-0313 is as follows:

Part II.1 Pipe and fittings conforming to the corrosion resistant guidelines in this part are the twelve (12) inch RRC return lines and the RRC bypass stubs. These components as-installed, with the exception of field welds, are in the solution annealed condition.

Part II.2 The pipe to safe end and pipe to sweepolet field welds associated with the return lines included corrosion resistant cladding on the pipe side, 308L material with a maximum carbon content of 0.028% and a minimum ferrite content of 8%, and standard 308L weld filler metal with a minimum of 8% ferrite. The weld preparation after cladding allowed only the cladding material on the pipe side to form the weld on the interior diameter, i.e., no pipe material which may have become sensitized by the field weld and comes in contact with the reactor coolant has a carbon content greater than 0.028%. The stubs referred to above were also treated with similar corrosion resistant cladding.

A pipe to pipe field weld in the return lines (a result of the inlet nozzle safe end replacement with 316L) does not have corrosion resistant cladding or post-weld heat treatment. These welds, however, are associated with a stress rule index (SRI) value less than one and were performed with limited heat input (35KJ/in. - 40KJ/in.). The weld filler metal is standard 308L with a minimum of 8% ferrite.

When comparing these welds with already installed larger bore pipe welds in the system which had higher heat input, higher stresses and no post-weld heat treatment, these return line field welds are assessed to be less susceptible to intergranular stress corrosion cracking (IGSCC) than many other system welds.



New processes that change the stress profile and minimize IGSCC are currently under development. Several years into operation, means should be available to minimize the possibility of IGSCC with the pipe in place. At this time the subject return line welds will be evaluated with the other system welds for such treatment, if warranted.

- Part III.1 See Parts II.1 and II.2 above for piping which conforms to Part II. The nonconforming RRC and RHR system piping was already installed with exception to the pipe to pipe return line field welds which have a low SRI and limited heat input. As can be seen, WNP-2 conforms to the intent of Part II of NUREG-0313 to the extent practicable when considering schedule and the status of plant construction.
- Part III.2.A (1) The nonconforming, not service sensitive, lines will be initially examined in accordance with ASME Section XI, Subsection IWB, at not more than 80 months after beginning commercial operation. The lines affected by this time interval are the RRC loops, excluding the twelve (12) inch return line shop welds which conform to Parts II.1 and II.2..
- Part III.2.A (2) The reactor coolant leakage detection system is described in the FSAR in Sections 5.2.5 and 7.6.1.4.
- Part III.2.A (2a) The compliance with Reg. Guide 1.45 is discussed in Appendix C.2, pp C.2-39 through C.2-41 of the FSAR.
- Part III.2.A (2b) WNP-2 currently plans to comply with the BWR 5 Standard Technical Specification in this area as documented in NUREG-0123, Rev. 1, April 1, 1978, if practicable. These specifications reflect compliance with the position.
- Part III.2.A (2c) WNP-2 concurs with the definition of unidentified leakage. With respect to this and the current Rev. 1 of NUREG-0123, it should be noted that the drywell floor drain flow monitoring system does collect leakage from the drywell diaphragm floor seals. This leakage is not expected to be significant, however, and thus the floor drain system meets the intent of being the Primary Containment air cooler condensate flow rate monitoring system as stated in NUREG-0123.
- Part III.2.B The nonconforming, service sensitive, lines will be examined on a sampling basis (WNP-2 does not have RRC bypass lines) for three successive inspections, not exceeding the time duration between each of the first three refueling outages. Other convenient plant shutdowns may be used during this period for one or more of the examinations. The lines affected by this inspection interval are the austenitic stainless steel RHR shutdown cooling suction and return lines and the stagnated, short pipe spools that are associated with the RRC loops.

The reactor core spray piping is carbon steel and the RRC bypass stubs, as previously discussed, conform to Part II and therefore are not subject to this part. In the event no unacceptable indications are found in the three successive inspections for the service sensitive lines, the inspection interval shall revert to an 80 month period.

