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Dalwyn R. Davidson
VICE PRESIDENT
SYSTEM ENGINEERING AND CONSTRUCTION

July 2, 1981

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

Dear Mr. Eisenhut:

This letter is in response to your Generic Letter 81-03, dated February 26, 1981, concerning implementation of NUREG-0313, Revision 1, "Technical Report on Material Selection and Processing Guidelines for BWR Coolant Pressure Boundary Piping (Generic Task A-42)."

We have reviewed all the ASME Code Class 1, 2, and 3 pressure boundary and engineered safety features systems piping, safe ends and fitting material, including weld metal, at the Perry Nuclear Power Plant to determine if the austenitic stainless steel piping meets the guidelines of NUREG-0313, Revision 1.

All NSSS-supplied stainless steel piping now conforms to the corrosion-resistant material requirements of Section III of the guidelines. Measures have been implemented to reduce the susceptibility to intergranular stress corrosion cracking, including application of corrosion-resistant cladding followed by solution annealing on the recirculation piping, including riser lines, and replacement of recirculation inlet safe end and thermal sleeves with 316L austenitic stainless steel material having a no-crevice design. Additionally, service sensitive recirculation bypass lines, CRD hydraulic return line and isolation condenser lines have been deleted. The Standby Liquid Control System Piping will be fabricated from Type 316L stainless steel conforming to the material requirements of NUREG-0313, Revision 1. Since all this piping conforms to the material selection and processing guidelines of NUREG-0313, Revision 1, there is no need for augmented in-service inspection and leak detection methods.

All Reactor Coolant Pressure Boundary (RCPB) and Engineered Safety Features (ESF) systems stainless steel piping, other than the NSSS-supplied and the Standby Liquid Control system are fabricated from Type 304 stainless steel. Individual pipe lengths and fittings have been procured in the solution annealed condition under ASME Specifications SA-312, SA-376, and SA-403. Also, the following weld methods are employed for all pipe sizes:

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a. Weld heat input is controlled to limit the material heat flux valves to avoid the conditions that cause excessive sensitization.

b. Weld interpass temperatures are limited to a maximum of 350° F. and the weld weave pattern is limited to a maximum of four times the core wire diameter to control the heat build-up which contributes to excessive sensitization.

c. Weld procedures also conform to the guidelines of NRC Regulatory Guide 1.44, "Control of the Use of Sensitized Stainless Steel."

In addition, all piping two-inch nominal pipe size or less is field fabricated using socket welded fittings which prevent the welded portion of pipe from being exposed to the reactor coolant or other process fluid. This also eliminates the necessity for interior grinding since the interior surface of the pipe is not disturbed. Socket welding can avoid excessive weld-sensitization of the pipe inside surface when proper welding procedures are followed.

Large diameter piping (greater than two inches nominal pipe size) does not utilize socket weld fittings, rather is butt welded. Therefore, it is included in the attached table identifying the piping materials found to be "nonconforming" per the NUREG-0313, Revision 1, Section III criteria. Replacement of these materials would present undue hardship, since Perry Unit 1 and common facilities are 76 percent complete, with nearly all the affected piping received and 80 percent installed. Although a smaller percentage of Unit 2 piping has been installed, 80 percent of the large diameter piping has already been received. Our experience has shown lead times for replacement of some piping would exceed one year.

Noting the very high degree of protection against stress corrosion cracking provided, moderate design conditions, function, and location of the piping, the fact that the piping is not service sensitive, as well as the hardships involved, no augmented in-service inspection or additional leakage detection capability will be implemented.

Technical specifications concerning general surveillance requirements and RCPB leakage detection will be reviewed prior to submittal to incorporate changes, as appropriate, to conform to the guidance of the report.

If you require any further information, please let us know.

Very truly yours,

D. R. Davidson

D. R. Davidson
Vice President
System Engineering and Construction

DRD:bas
Enclosure

cc: G. Charnoff J. Hughes, Resident Inspector

System No.	Description	Drawing No.	ASME Class	Size	Mat'l.	Normal Temp.
C-11	Control Rod Drive Hydraulic System					
	Drive water piping at Pen. P204 between F083 and F122 (Approximately 15 ft.)	D-302-871 D-302-872	2	2½" B.W.	304 S.S.	140°
E-12	Residual Heat Removal System					
	Test return lines to suppression pool downstream of reducing orifice D003 A & B (Approximately 20 ft.)	D-302-642	2	10" Flanged (weld neck)	304 S.S.	358°
	Test return line to suppression pool downstream of reducing orifice D008 (Approximately 20 ft.)	D-302-642	2	18" Flanged (weld neck)	304 S.S.	358°
	Safety relief valve discharge to suppression pool downstream of reducing orifice D-006 A & B (Approximately 20 ft.)	D-302-642	2	6" Flanged (weld neck)	304 S.S.	212°
E-22	High Pressure Core Spray					
	Test return line to suppression pool downstream of reducing orifice D005 (Approximately 20 ft.)	D-302-701	2	12" Flanged (weld neck)	304 S.S.	120°
G-41	Fuel Pool Cooling and Cleanup					
	Piping to surge tank at Pen. P301 between MCV-P140 and MCV-F145 (Approximately 10 ft.)	D-302-651	2	10" B.W.	304 S.S.	180°
	Piping from filter/demineralizer system at Pen. P203 between MCV-F100 and check value F522 (Approximately 10 ft.)	D-302-651	2	8" B.W.	304 S.S.	180°

System No.	Description	Drawing No.	ASME Class	Size	Mat'l.	Normal Temp.
G-41	Fuel Pool Cooling and Cleanup					
	Balance of piping including connections to other systems	D-302-651 D-302-654 D-302-655	3	16" B.W. 12" B.W. 10" B.W. 8" B.W. 6" B.W. 4" B.W. 3" B.W.	304 S.S. 304 S.S.	212° 212° 212° 212° 212° 212° 212°
G-43	Suppression Pool Makeup					
	Suppression pool makeup lines between seperator storage well and MCV-F040 A & B	D-302-686	2	24" B.W.	304 S.S.	50°
G-50	Liquid Radwaste					
	Spent resin tank outlets	D-302-735	3	6" B.W. 4" B.W.	304 S.S.	Ambient
	RWCU filter/demineralizer backwash receiving tank outlets	D-302-737	3	4" B.W.	304 S.S.	Ambient
	RWCU filter/demineralizer backwash settling tank outlets	D-302-737	3	4" B.W.	304 S.S.	Ambient
P-11	Condensate Transfer and Storage					
	Condensate Storage Tank outlet line downstream of F518 (Approximately 230 ft. yard piping and 75 ft. indoors)	D-302-102	2	18" B.W.	304 S.S.	135°
	Branch Connection from Condensate Storage Tank outlet line to HPCS System (Approx. 100 ft.)	D-302-102	2	16" B.W.	304 S.S.	135°
	Branch Connection from Condensate Storage Tank outlet line to RCIC System at E51-F010 (Approximately 12 ft.)	D-302-101	2	6" B.W.	304 S.S.	135°