

# CATEGORY 1

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ACCESSION NBR: 9704290127    DOC. DATE: 97/04/23    NOTARIZED: NO    DOCKET #  
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SUBJECT: Submits addl info re matl properties of recirculation sys piping.

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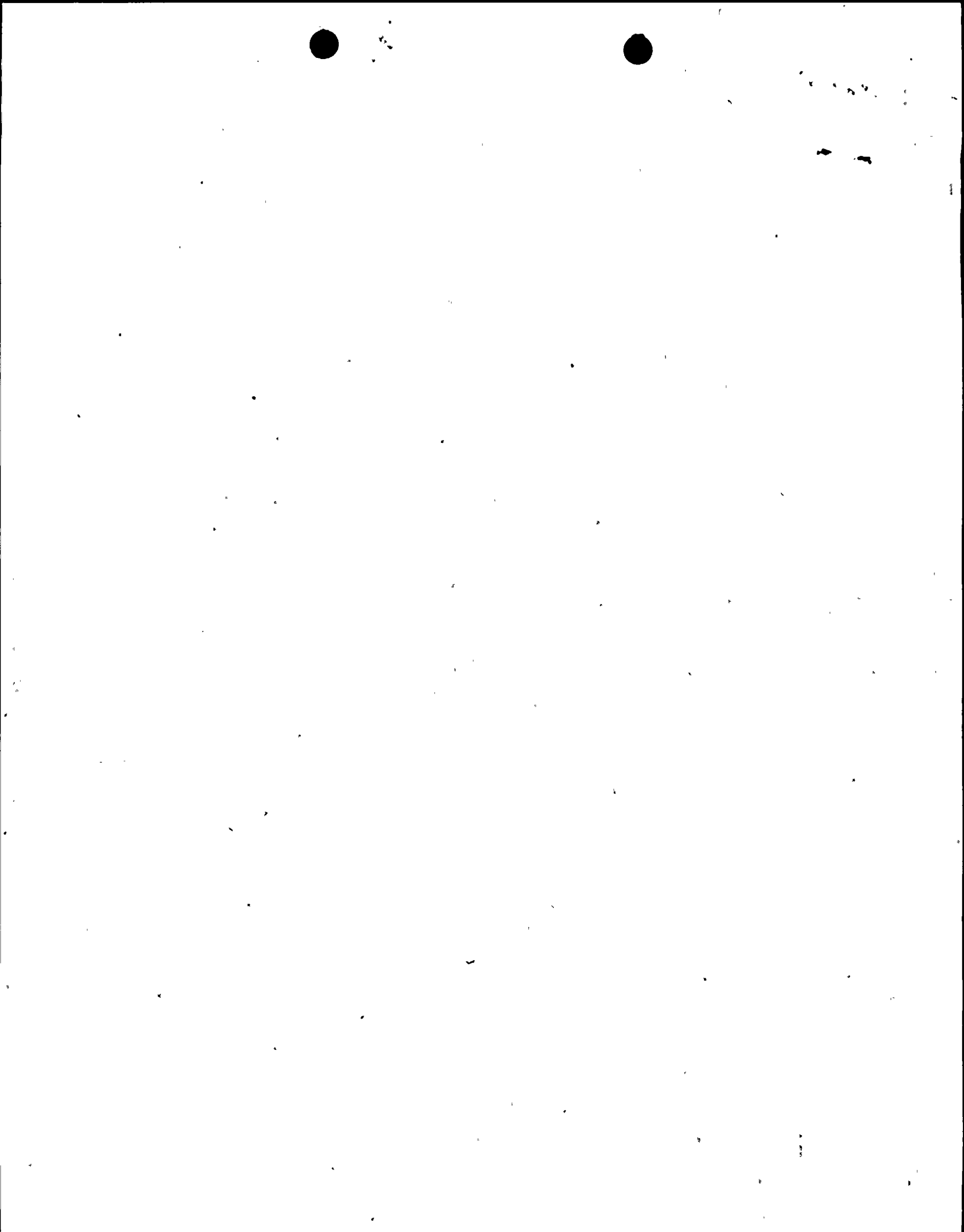
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Vice President  
Nuclear Engineering

April 23, 1997  
NMP1L 1207

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555

RE: Nine Mile Point Unit 1  
Docket No. 50-220  
DPR-63

*Subject: Additional Information Regarding Material Properties of Recirculation System Piping*

Gentlemen:

During a phone conversation on April 21, 1997 with Mr. W. Koo of the NRC Staff, the mechanical properties of the material used for the Recirculation System piping was discussed. This information was used as an input to the "Analytical Evaluation of a Rejectable Weld Indication", which we submitted to the NRC for review and approval on April 7, 1997 (NMP1L 1201). Mr. Koo asked that Niagara Mohawk provide written documentation indicating that the mechanical properties of the Recirculation System replacement piping material meets the requirements for Type 316 stainless steel.

The replacement piping material used for the Nine Mile Point Unit 1 recirculation loops is a modified Type 316 stainless steel with controls on carbon (0.02% maximum) and nitrogen (0.1% maximum) content. Mechanical properties were not modified or relaxed from normal Type 316 properties in the piping purchase specification. Accordingly, normal Type 316 stainless steel mechanical properties were used in the analytical evaluation of the indication in Weld 32-WD-050. A copy of the pertinent pages of the purchase specification (MPR Specification 85-21-07, pages 2 of 6 and 3 of 6) are attached to this letter.

Very truly yours,

M. J. McCormick Jr.  
Vice President - Nuclear Engineering

A001/1

MJM/AFZ/cmK  
Attachment

xc: Mr. H. J. Miller, NRC Regional Administrator, Region I  
Mr. S. S. Bajwa, Acting Director, Project Directorate I-1, NRR  
Mr. B. S. Norris, Senior Resident Inspector  
Mr. D. S. Hood, Senior Project Manager, NRR

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### 1.7 Conflicts

The requirements of this specification shall have precedence over all other documents included or referenced herein. Any conflict between this specification and other included or referenced documents shall be brought to the attention of the Purchaser for resolution prior to any action by the Supplier.

### 1.8 Review of Supplier Documents

Review of the Supplier's procedures by the Purchaser does not relieve the Supplier of the responsibility to meet requirements of this specification

## 2.0 APPLICABLE DOCUMENTS

### 2.1 Codes

2.1.1 ASME Boiler and Pressure Vessel Code, Section III, 1980 Edition and Addenda through the Winter 1980 Addenda.

2.1.2 ASME Boiler and Pressure Vessel Code, Section II, Part A, Ferrous Materials, current effective edition and addenda.

2.1.3 ASME Boiler and Pressure Vessel Code, Section XI, 1974 Edition with Addenda through Summer 1974.

### 2.2 Standards

2.2.1 Material standards referenced herein are contained in Reference 2.1.2.

2.2.2 The following additional standards shall be used to the extent referenced herein: ASTM A262-75, Standard Recommended Practices for Detecting Susceptibility to Intergranular Attack in Stainless Steels.

## 3.0 REQUIREMENTS

### 3.1 Material and Fabrication Requirements

3.1.1 Elbows and pipe section out may be seamless or may be fabricated from rolled and welded plate and shall be made of nuclear grade 316 base material with a maximum carbon content of 0.02% and a maximum nitrogen content of 0.10%.



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Weld material shall be 308L or 316L .02% carbon maximum and a ferrite number of 8 minimum. The parts shall be in accordance with all applicable requirements of Reference 2.1.1 and with the following:

- 3.1.1.1 Elbows and reducing tees - seamless or welded WP316 or WP316W fittings in accordance with SA-403 and SA-652, Class 1.
- 3.1.1.2 Pipe - Seamless or welded Type 316 pipe per SA-312 or SA-358 and SA-655 Class 1.
- 3.1.2 The parts shall be in accordance with Sketches 1 thru , inclusive.
- 3.1.3 Applicable requirements of Section NB-2000 of Reference 2.1 shall be met. (For submerged arc undiluted weldments for each wire heat/flux to combination shall have a maximum carbon content of 0.03%).
- 3.1.4 All material shall be solution heat treated after any welding is complete at  $1975^{\circ}\text{F} \pm 25^{\circ}\text{F}$  for one hour per inch of material thickness but no less than one hour minimum and then water quenched. Certified copies of the furnace heat treatment chart shall be provided to the purchaser together with other test reports.
- 3.1.5 If welded parts are supplied, the welds shall be ultrasonically examined in accordance with References 2.1.3 in addition to the radiography required by the material specification. The acceptance standards for this examination shall be those of paragraph NB-5330 of Reference 2.1.1. This examination shall be performed on the part after solution heat treatment.
- 3.1.6 Grinding of the interior surface is not permitted following the solution heat treating of 3.1.4.
- 3.1.7 The parts shall be verified after solution heat treatment as being free from sensitization using ASTM A262, Practice E.
- 3.1.8 The parts shall not be heated to above  $800^{\circ}\text{F}$  after the solution heat treatment of 3.1.4.



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