April 7, 1997

LICENSEE: Niagara Mohawk Power Corporation

FACILITY: Nine Mile Point Nuclear Station Unit No. 1

SUBJECT: SUMMARY OF TELEPHONE CONVERSATION OF APRIL 3, 1997, REGARDING RECIRCULATION PIPING WELD

On April 3, 1997, the NRC staff participated in a telephone conference call with Niagara Mohawk Power Corporation (NMPC and licensee) to discuss the licensee's observations from inspections of Weld 32-WD-050 between the recirculation system suction piping and isolation valve 32-376 at Nine Mile Point Nuclear Station, Unit 1. The list of participants is given in Enclosure 1. Enclosure 2, which was telecopied to the NRC for the telephone conference, summarizes the licensee's discussion. The licensee's evaluation of the flaw is in progress.

The flaw was observed by ultrasonic testing (UT) to be about 1/4 inch in depth relative to the piping inner diameter and located about 3 inches from the long (axial) seam of the piping in a root repair area of the weld that was made in 1982/1983 when the recirculation piping was replaced. The licensee plans to recheck (1) the Induction Heating Stress Improvement (IHSI) record for the weld from the 1986 inservice inspection to confirm that the stress relief technique was properly applied and (2) the post IHSI automated raw UT data for the presence of a flaw.

The licensee believes that the indication is either a reflector caused by an unsuccessful repair at installation or cracking initiated due to stresses in the localized repair area. Based on Generic Letter 88-01, the licensee is considering maintaining the weld classification as Intergranular Stress Corrosion Cracking Category A, even though NMPC intends to increase the frequency of inspection at least during the next two refueling outages. The NRC staff strongly recommended that the licensee consider reclassification as Category F, which requires reinspection each refueling outage.

Sincerely,
/S/
Darl S. Hood, Senior Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-220

Enclosures: 1. List of Participants
2. Telecopied Text and Sketches

cc w/encls: See next page
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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Docket No. 50-220

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2. Telecopied Text and Sketches

cc w/encls: See next page

cc:

Mr. B. Ralph Sylvia
Executive Vice President
Generation Business Group
and Chief Nuclear Officer
Niagara Mohawk Power Corporation
Nuclear Learning Center
450 Lake Road
Oswego, NY 13126

Mr. Richard B. Abbott
Vice President and General Manager -
Nuclear
Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station
P.O. Box 63
Lycoming, NY 13093

Mr. Martin J. McCormick, Jr.
Vice President
Nuclear Safety Assessment
and Support
Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station
P.O. Box 63
Lycoming, NY 13093

Mr. Kim A. Dahlberg
General Manager - Projects
Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station
P.O. Box 63
Lycoming, NY 13093

Mr. Norman L. Rademacher
Plant Manager, Unit 1
Nine Mile Point Nuclear Station
P.O. Box 63
Lycoming, NY 13093

Ms. Denise J. Wolniak
Manager Licensing
Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station
P.O. Box 63
Lycoming, NY 13093

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Resident Inspector
U.S. Nuclear Regulatory Commission
P.O. Box 126
Lycoming, NY 13093

Charles Donaldson, Esquire
Assistant Attorney General
New York Department of Law
120 Broadway
New York, NY 10271

Mr. Paul D. Eddy
State of New York
Department of Public Service
Power Division, System Operations
3 Empire State Plaza
Albany, NY 12223

Mr. F. William Valentino, President
New York State Energy, Research,
and Development Authority
Corporate Plaza West
286 Washington Avenue Extension
Albany, NY 12203-6399

Mark J. Wetterhahn, Esquire
Winston & Strawn
1400 L Street, NW
Washington, DC 20005-3502

Supervisor
Town of Scriba
Route 8, Box 382
Oswego, NY 13126

Gary D. Wilson, Esquire
Niagara Mohawk Power Corporation
300 Erie Boulevard West
Syracuse, NY 13202

LIST OF PARTICIPANTS

April 3, 1997

| NMPC | NRC |
| --- | --- |
| T. Zallnick | W. Koo |
| T. Lee | W. Lazarus (RI) |
| J. Wadsworth | D. Hood |
| J. Swenszkowski | |
| J. Cilento | |
| et al. | |

Enclosure 1

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| | |
|---|---|
| To D. Hood | From R. Zaffiro |
| Co. NRC | Co. NMPC |
| Dept. Proj. Mgr | Phone # 315-349-7428 |
| Fax # 301-415-2002 | Fax # 315-349-1700 |

# RECIRCULATION SYSTEM WELD INDICATION RESPONSES TO NRC QUESTIONS

**1. Previous preservice (PT, UT, RT) and inservice findings:**

PT: 1983 PSI - (11) rounded indications, all less than 1/16" in diameter. 1997 ISI - (1) 1/4" rounded indication recorded.

UT: 1983 PSI - UT identified root geometry and counterbore geometry 360° at various amplitudes. 1986 post IHSI - automated UT identified "no relevant indications found."

RT: 1983 root pass info - lack of fusion noted between 17"-19" location markers - repaired, re-shot and accepted. Final ASME Section III RT accepted on 1-25-83. It should be noted that the present UT indication is at the same location as the root repair area discussed above. 1997 supplemental RT - performed supplemental RT on this indication this outage. Indication was not seen with conventional or enhanced digitization of the RT film. Installation and supplemental RT film was digitized, however, the areas of interest did not positively reveal this indication.

**2. Indication of a crack? Does it show IGSCC characteristics?**

- Indication is a non-geometric planar reflector. There is not enough information to positively characterize this indication at this time.
- The indication appears to be clearly contained within the root repair area with 45° shear, 60° R.L., and WSY-70. The apparent tip signals observed with IGSCC sizing techniques were low amplitude.
- This indication does exhibit some IGSCC characteristics such as location and skewing.

**3. Any fracture mechanics status or results?**

NMPC has contracted MPR Associates to perform an analytical evaluation of the indication per the 1986 Edition of ASME Code Section XI. The evaluation is currently underway. Preliminary results show that the flaw size calculated for the end of the upcoming operating cycle meets the Table IWB-3641 allowable flaw size criteria. The

evaluation considers flaw growth by stress corrosion cracking as well as by fatigue. These results are preliminary and have not been reviewed or accepted by NMPC.

4. **Confirm the weld was a pipe field replacement weld, the piping material specification and the pipe wall thickness.**

Weld 32-WD-050 was replaced during the outage between 3/19/82 and 6/4/83. The root weld was installed on 12/21/82 and final welding completed on 1/11/83. Root radiography report was rejected because of an area of incomplete fusion, which was repaired. No further repairs were made to the weld.

Materials:

Valve 32-376 is A351 Gr CF8M
28" Piping is SA 358 Cl. 1 Gr 316, Modified 0.02% Max Carbon
Weld Metal is ER-308L 0.035" and IN-308L 1/8" x 5/32"
Pipe Wall Thickness: Specified Min. Wall 1.050"; UT Measurement 1.1".

5. **Radiation levels?**

1,000 mr on contact (system drained); 500 mr at 1 foot.

6. **Any unusual history that might be tied to a cause?**

See response to question 4. NMPC has verified that area of incomplete fusion identified and repaired in 1983 (installation) is in the same location as indication found in RFO14. UT performed in 1986 following IHSI identified "no relevant indications found."

7. **Overall conclusion on indication.**

Indication is either a reflector caused by an unsuccessful repair at installation or cracking initiated due to stresses in the localized repair area.

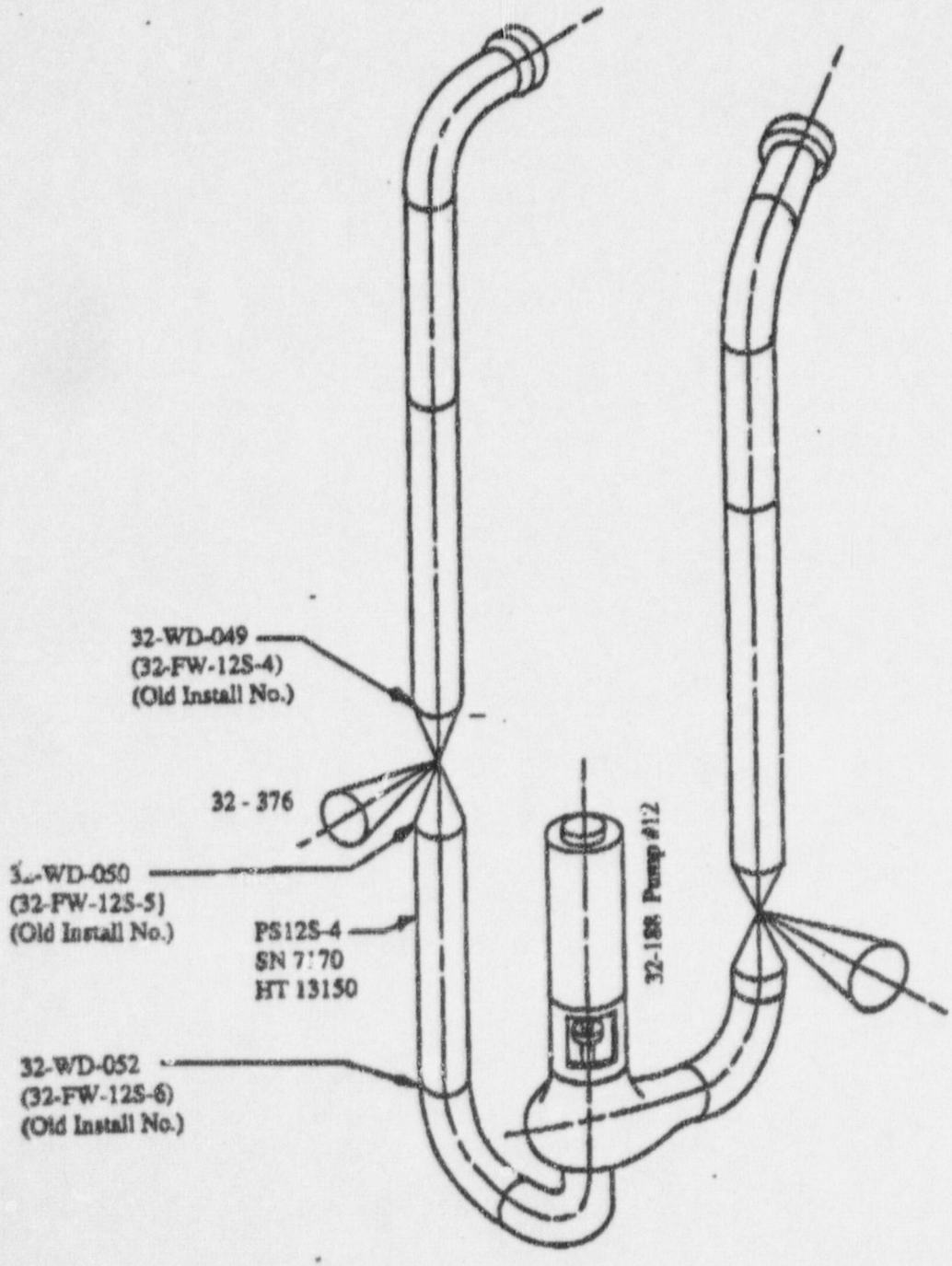
## ADDITIONAL INFORMATION

**Location:**

See simplified sketch. Upstream of weld 32-WD-050 is the loop 12 suction blocking valve 32-376 and downstream is a 11'-5.5" length of 28" pipe.

**Expanded Examination:**

An expanded sample of 9 additional examinations on the recirculation system were chosen. All additional examinations have been completed and found to be acceptable. Also, approximately 50% of the welds in the recirculation system have been UT examined since piping replacement with no rejectable indications found.




NMP1
Loop 12
Reactor Recirculation

NIAGARA MOHAWK

## SKETCH SHEET

NDE Report: 1-6.03-97-0219
Work Document: NMP1-151-002 R.0
Page 3 of 4
Exam Item: 32-WD-050
Procedure/Rev.: 6.03 REV 11

Plant/Unit: Nine Mile Point Unit 1
ISO/Dwg.: F-45183-C SH.7 REV 5
System: 320

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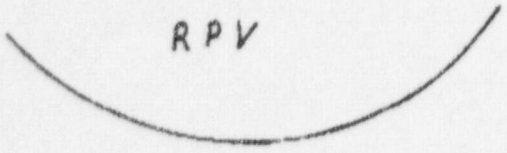
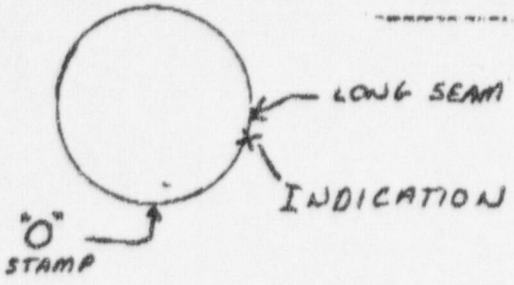
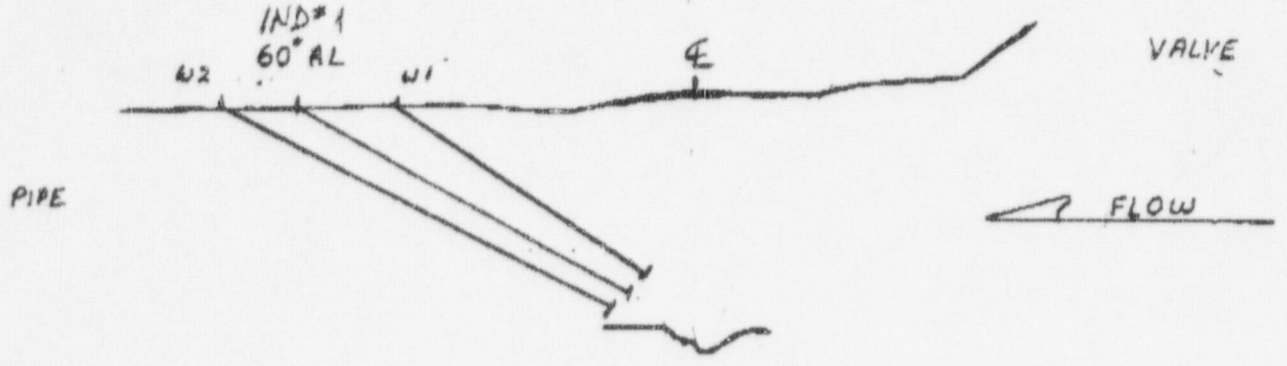
| Dept. Proj. Mgr | Phone # 315-349-7728 |
| Fax # 301-415-2102 | Fax # 315-349-1400 |




NOTE: PEAK AMPLITUDE ATTAINED BY SKEWING TRANSDUCER 10°-15° BACK TOWARD "0"

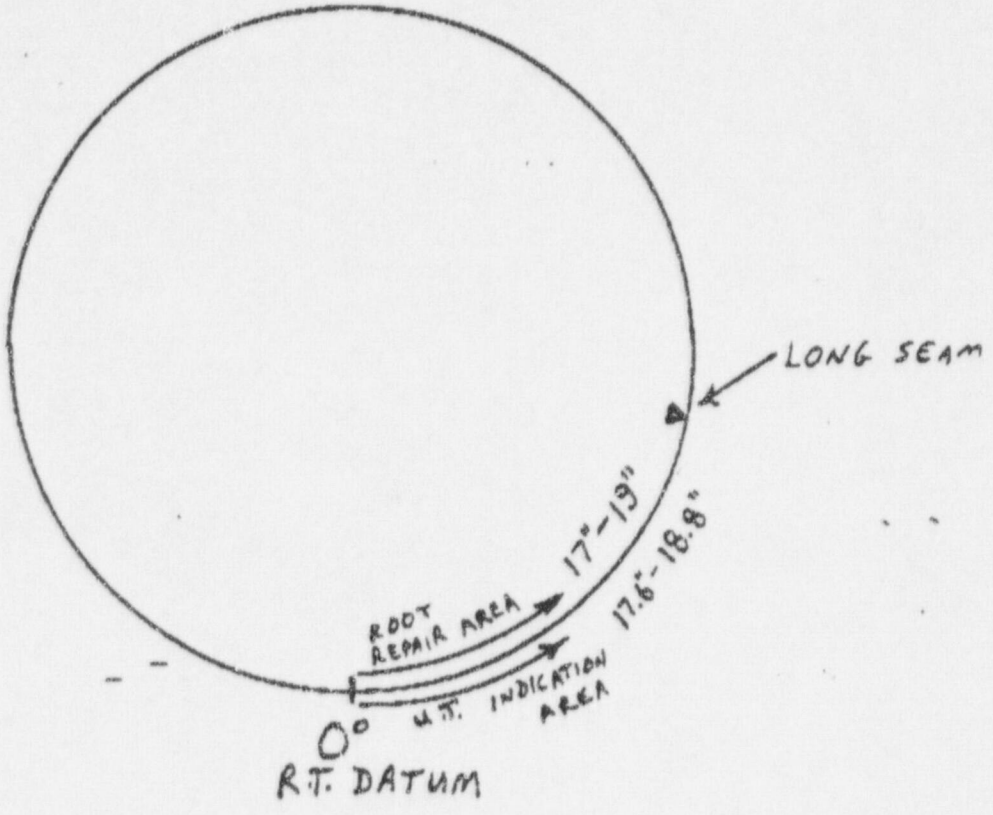
Examiner 1: Mark Kellogg Level: II Company: G.E. Date: 3-18-97
Examiner 2: N/A Level: N/A Company: N/A Date: N/A
Reviewer 1: Jeff K Mills Level: II Company: NIC Date: 3/22/97
ANII: _____ Date: _____

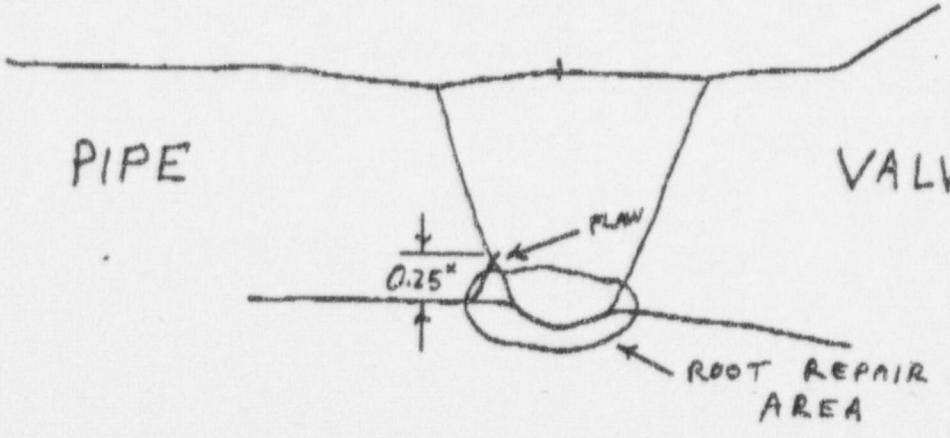
NIAGARA MOHAWK

SKETCH SHEET

NDE Report: INFORMATION SKETCH: FLAW LOCATION
Work Document: RELATIVE TO ROOT
Page 1 of 1 REPAIR AREA
Exam Item: WELD # 32-WD-050
Procedure/Rev.: N/A

Plant/Unit: Nine Mile Point Unit 1
ISO/Dwg.: E-45183-C
System: 32.0 RX RECIRC




Examiner 1: J.J. CILENTO Level: III Company: NMPC Date: 4-3-97

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| Dept. Project Manager | Phone # 315-349-7928 |
| Fax # 301-415-2102 | Fax # 315-349-1400 |

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