



ATTACHMENT 1
UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

Docket No. 50-410
License No. NPF-69
EA 87-104

JUL 11 1985

Niagara Mohawk Power Corporation
ATTN: William Donlon
President
301 Plainfield Road
Syracuse, New York 13212

Gentlemen:

Subject: NRC Office of Investigations (OI) Report No. 1-85-020

This refers to the investigation conducted by the NRC Office of Investigations (OI) concerning (1) the adequacy of your Quality First Program (Q1P) investigation of the circumstances associated with the installation of certain neutron monitoring system (NMS) cables at Nine Mile Point, Unit 2, in May, 1985, and (2) the accuracy of the facts concerning the installation effort as reported in a letter to the NRC dated July 11, 1985. The Q1P investigation had been conducted after the NRC had informed your Executive Director for Nuclear Operations, in a letter dated June 7, 1985, that this office had received an allegation that there was improper installation of the NMS cables due to excessive pulling tension, inadequate quality control (QC) coverage of this activity, and improper pressure by contractor employees to complete installation. The OI Report of Investigation Synopsis is enclosed.

Although sufficient evidence was not developed during the OI investigation to demonstrate that improper pressure had been exerted on contractor employees to complete the installation of the cables, the information developed during the OI investigation demonstrates, at a minimum, that the July 11, 1985 letter to the NRC was incomplete and misleading. That letter, which was signed by the Director of Quality Assurance and reviewed by your Nuclear Compliance and Verification Group, stated that the installation of the cables was technically satisfactory, and the QC Program was adhered to; however, the letter did not indicate that (1) pushing of the cable during the installation was done without a procedure, (2) pulling of the cable during the installation was done without using a tension monitoring device, as required, and (3) Quality Control personnel, although physically monitoring the installation effort as required by the QC program, did not have specific inspection criteria and inspection procedures available to determine the acceptability of the cable installation.

Although the procedural violations associated with the installation effort were previously identified during an NRC inspection conducted in November and December, 1985, (Reference: NRC Inspection Report No. 85-42) and were cited in a Notice of Violation sent to you on January 22, 1986, the NRC is also concerned that the July 11, 1985 response to Region I was incomplete and misleading, and the Q1P investigation which formed the basis for that response was not adequately planned, conducted or evaluated. In particular, (1) the individual responsible for conducting the investigation, although investigating an electrical cable installation activity, was lacking in electrical experience; (2) the investigator used poor investigative techniques, such as interviewing

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personnel in the presence of their supervisors and not interviewing craft personnel; (3) neither the investigator, nor the QIP manager responsible for overseeing the investigator, adequately analyzed and presented the facts obtained during the QIP investigation; and (4) the Director of QA, as well as the others who reviewed the letter, apparently did not recognize these deficiencies.

These deficiencies raise questions regarding the adequacy of your Quality First Program in resolving employee concerns, and the adequacy of your communications with the NRC. Furthermore, the NRC SALP Report sent to you on May 14, 1986 also raised concerns regarding the level of QIP documentation to substantiate closure of employee concerns. In addition, the NRC SALP Report sent to you on August 12, 1987 describes concerns regarding corporate management involvement and internal communications while handling QA concerns brought to the attention of QIP personnel.

In view of these findings, we plan to schedule an enforcement conference to be conducted in the Regional office within the next 30 days. During the conference you should be prepared to discuss (1) the underlying causes of these QIP and communication deficiencies, (2) the corrective actions taken or planned to correct these deficiencies and prevent recurrence, and (3) the reasons the NRC should believe that your QIP program now provides an acceptable outlet for allowing employees to raise safety concerns, and for having these concerns promptly and effectively resolved. When you have reviewed the enclosed Report Synopsis and are prepared to discuss its findings please contact us to arrange the date and time for the conference.

Your cooperation with us in this matter is appreciated.

Sincerely,


William F. Kane, Director
Division of Reactor Projects

Enclosure: As Stated



cc:

Connor & Wetterhahn
John W. Keib, Esquire
J. A. Perry, Vice President, Quality Assurance
Troy B. Conner, Jr., Esquire
C. V. Mangan, Senior Vice President - Nuclear
T. E. Lempges, Vice President, Nuclear Generation
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J. C. Aldrich, Superintendent of Operations, Unit 1
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Director, Power Division
W. Hansen, Manager Corporate Quality Assurance
C. Beckham, Manager, Nuclear QA Operations
T. J. Perkins, General Superintendent
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Department of Public Service, State of New York
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
NRC Resident Inspector
State of New York



SYNOPSIS

The NRC received an anonymous letter, dated May 20, 1985, alleging improprieties in the installation of the Neutron Monitoring System (NMS) cables at Nine Mile Point, Unit 2 (NMP-2). Specifically, it alleged improper management pressure and the over-tensioning and breaking of two cables due to the application of excessive pull tension. On June 7, 1985, the NRC referred this matter back to Niagara Mohawk Power Corporation (NMPC) for resolution of the concerns; whereupon NMPC's Director of Quality Assurance (QA) referred the matter to NMPC's Quality First Program (Q1P).

Q1P reviewed relevant OC Inspection Reports (IRs), cable pull tickets, and Nonconformance & Dispositions (N&Ds). They also interviewed eight OC personnel, three individuals from engineering, five construction supervisors, one project manager, and three craft supervisors. Some of these were interviewed in groups and, in several instances, in the presence of their superiors. The Q1P investigator advised that he received such detailed information from the individuals he interviewed that he felt it was unnecessary to question craft personnel, opining that to interview craft level personnel would have been a waste of time.

In a letter dated July 11, 1985, NMPC's QA Manager reported Q1P's findings to the NRC. He reported that the installation of the cable was technically satisfactory, the OC program was adhered to by qualified personnel, and there was no evidence of improper pressure by supervision. He added that there would be continuity and insulation resistance testing performed on the installed cable during the month of July, with a QA technician assigned to monitor the tests.

Prior to submission of the July 11 letter, NMPC's Nuclear Compliance and Verification (NC&V) Group at NMP-2 reviewed a draft of Q1P's findings. During the OI investigation, NC&V personnel stated that they were directed to assist Q1P by reviewing the draft but not requested to perform a formal review and verification effort. Consequently, they advised that they did not do any field work or research to develop supporting documentation for the statements contained within the letter. A system attorney for NMPC also reviewed the July 11 letter; however, he testified that he did not check the facts, assuming they were as stated.

In September 1985, an alieger approached a representative of the New York State Public Service Commission (NYSPSC) raising questions about the adequacy of the Q1P investigation into the NMS cable concerns, the breaking and over-tensioning of cables during installation, and pressure on construction workers to complete the installation. On October 3, 1985, the Regional Administrator requested that OI determine the validity of the allegation that the Q1P investigation did not accurately report the facts of the incident in the licensee's July 11 letter. The investigation included an examination of the adequacy of the installation and associated procedural compliance, including adherence to the QA program; as well as the question of improper pressure by supervision and the overall adequacy of the licensee's investigative and review effort.



The July 11, 1985, response advised that the concerns about cable pulling appeared to refer to a "mock" pull and "no one" had any knowledge of over-tensioning or breaking the cables. It further described the technique of installation as a "push" technique that had been approved by engineering and utilizing the tow line as a guide. However, OI interviews of QC inspectors, craft personnel and supervisors, some of whom had been previously interviewed by OIP, disclosed that a combination push/pull method was employed to effect cable installation. These individuals also disclosed that, even though pull tension was employed during installation, there was no tension monitoring, as required by the criteria set forth in the cable pulling procedure. Also, there was no written documentation reflecting review and approval of the "push" technique, which most acknowledged was a new method and not the norm for cable installation at NMP-2.

OI interviews revealed mixed recollections regarding a "mock" pull prior to installation. However, interviews with craft and QC personnel disclosed that in several instances either an NMS cable conductor broke during installation or, at the very least, separated or disconnected from the plastic polywater hose that was used to guide the cable and pump lubricating fluid into the conduits. These instances of either a break or disconnection/separation were during installation and not limited to problems encountered during a "mock" or test pull operation. Further, they were alleged by some to have been related to OIP personnel during their investigative effort. Craft personnel also indicated that the amount of pull tension applied during installation varied anywhere from the use of one or two fingers as a guide on the plastic polywater hose, to pulling with one hand and one arm and including the exertion of possibly 80 pounds of pull pressure on some of the more difficult and lengthy runs. The majority of the NMS cables (i.e., Mark No. NJP-29) had a pull tension limit of 35 pounds.

Additionally, there is no QC inspection program/criteria for cable "pushing" at NMP-2. When questioned as to what criteria was being applied during inspection, QC personnel advised they were visually observing the physical integrity of the cable. They admitted that they were limited to judging how much tension was applied, and one QC inspector indicated that periodically he had to caution the craft personnel to back off on the amount of pull tension being applied. QC personnel acknowledged that, although they did not think any cables were damaged during installation, it was impossible to say whether any cables were over-tensioned, because tension monitoring devices had not been used.

The NMPC response of July 11 also advised that the estimated production levels were achieved each day, with the exception of the second shift on May 2/3, which produced considerably less and resulted in the removal of two construction supervisors. It further stated that interviews with the two involved individuals confirmed that low productivity was the cause of this action. OI interviews with craft personnel, including craft foremen, disclosed that a number of individuals felt that there was more pressure than usual associated with the NMS job. They cited the fact that supervisors from Stone and Webster Engineering Corporation (SWEC) and L. K. Comstock (LKC) were around more than usual and seemed to exhibit more interest than normal in the effort.



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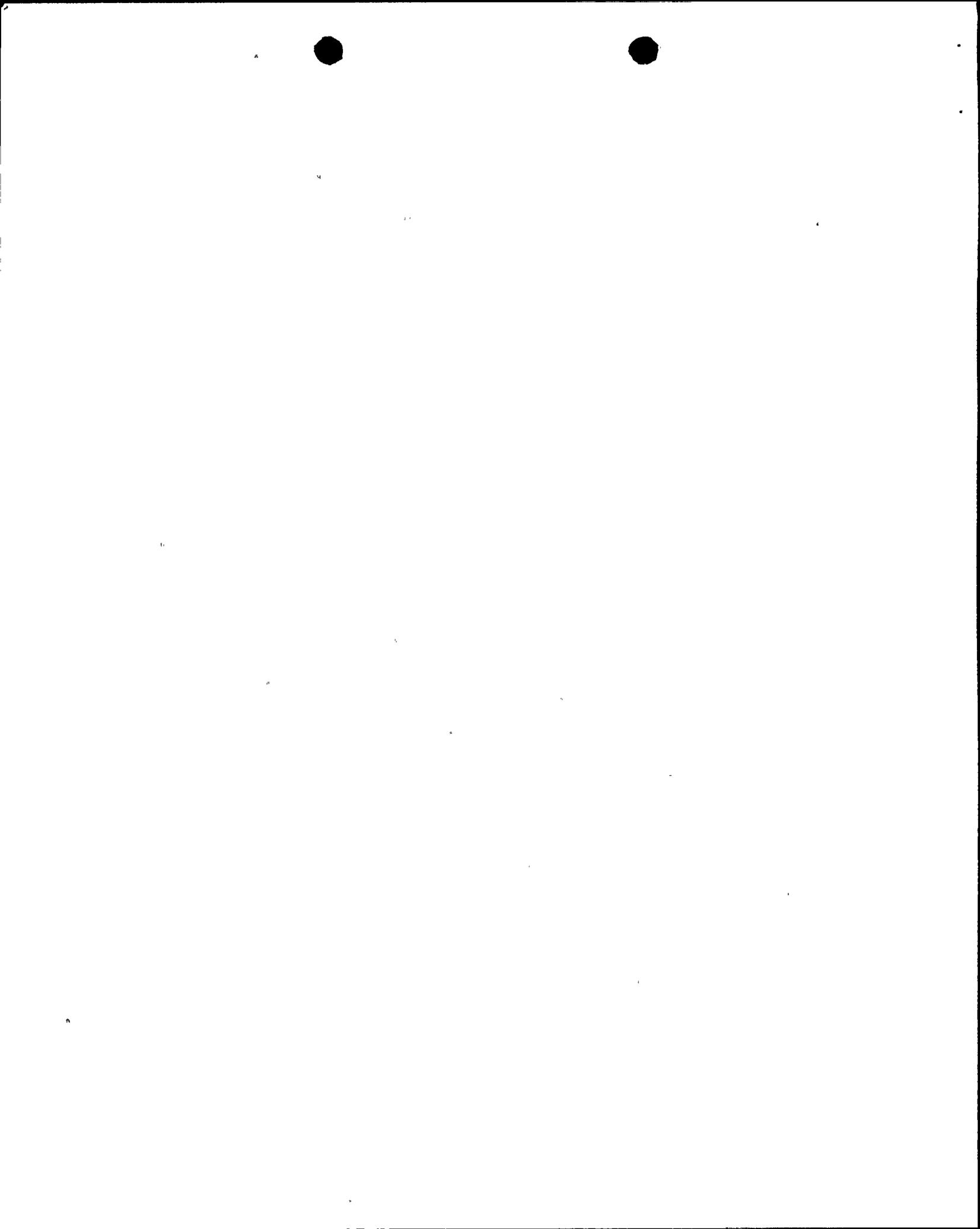
In addition, the contention that the lack of production after the first night's work resulted in the dismissal of two supervisors on the second shift is not supported by evidence that their production level was significantly less than the other shift on the first day. Testimony from individuals on the first shift indicated that they installed approximately the same number as the second shift that day, and that there were the normal startup difficulties and problems associated with beginning any new job effort. The two individuals who were removed acknowledged that it was their understanding that they were removed because of alleged non-productivity; however, neither agreed that it was a justified or valid contention.

Neither construction nor electrical contractor supervision could produce any documents quantifying the effort on the first night and comparing it with the work by all other shifts. Interviews with craft personnel leave no doubt that the sudden removal of two night shift supervisors after the first night's activities made an impression on the personnel. Most of the OC inspectors and craft personnel, as well as craft supervisors, opined that the sudden removal of the two night shift supervisors was a drastic action, unjustified and unprecedented at NMP-2.

OI's investigative findings indicate that the licensee's July 11, 1985, letter to the NRC contained false and inaccurate information regarding the conditions and atmosphere surrounding the NMS cable installation effort. There is evidence that individuals interviewed by OIP provided information regarding problems encountered during installation (i.e., cable breaks/separations) and pressure associated with the effort, information that should have raised questions concerning the licensee's findings. OI believes that the submission of this erroneous information constitutes at a minimum a careless disregard of the truth and accuracy of that information on the part of the licensee.

OI's investigation also disclosed that procedural violations occurred during cable installation, including a failure to adhere to OA guidelines. The evidence again indicates that these violations resulted at a minimum from careless disregard of procedures and guidelines on the part of the cognizant parties. Although many craft personnel spoke of pressure to complete the installation effort, there is insufficient evidence to conclude that there was improper pressure by supervision. Additionally, OI interviews with cognizant contractor construction and electrical management personnel did not disclose evidence of management pressure from within the licensee's organization.

OIP's failure to interview craft personnel involved in the installation effort, and to separate some of the individuals from their supervisors and peers during the interviews, as well as interjecting personal opinions into the interview process, are viewed as contributing to their failure to develop accurate information. In addition, many of the interviewees appear to be the same individuals who would have had a vested interest in protecting themselves against the allegations contained in the anonymous letter of May 20, 1985.



NMP-2 ENFORCEMENT CONFERENCE

EA 87-104

March 18, 1988 - 1:00 p.m.

Summary:

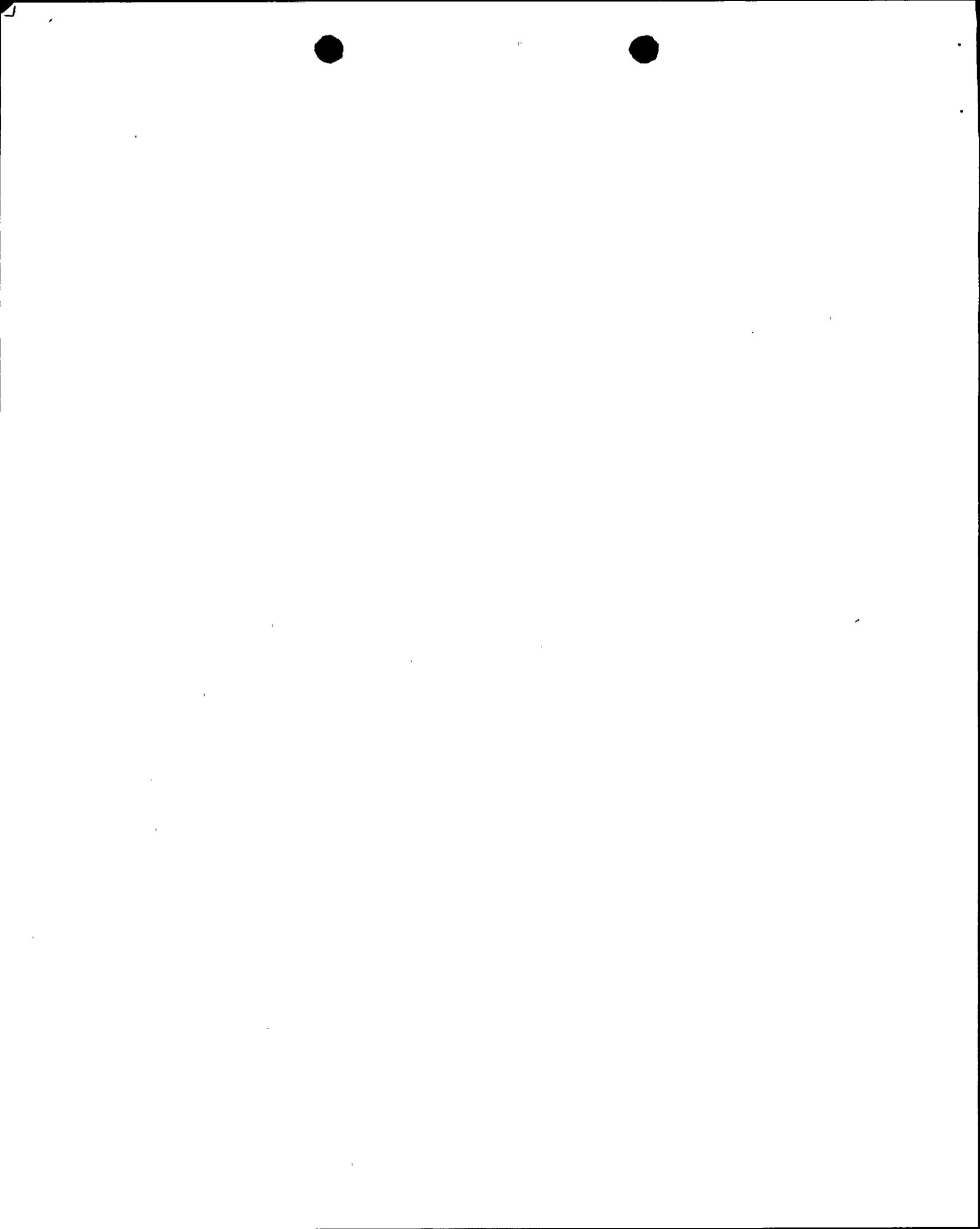
In June 1985 Region I formally requested that Niagara Mohawk evaluate alleged problems concerning the installation of neutron monitoring (NM) cables at Nine Mile Point 2 (NMP-2). The resulting Niagara Mohawk review was transmitted to Region I containing false and inaccurate information regarding the cable installation.

Technical Significance:

The safety significance of the cable installation problems is negligible. The installed cables were acceptable for use as is based on satisfactory continuity and insulation resistance tests, and subsequent preoperational tests and routine operations have demonstrated acceptable performance.

Chronology:

- 5/20/85 - Anonymous letter alleges that neutron monitoring cables had been installed improperly, in violation of procedures, and without proper quality control (QC) involvement.
- 6/7/85 - Region I requests that Niagara Mohawk review the problem.
- 7/11/85 - Niagara Mohawk transmits review, which states that neutron monitoring cable installation was satisfactory, in accordance with procedures, and with acceptable QC coverage.
- 9/85 - Anonymous worker alleges to N.Y. Public Service Commission that review was inadequate and findings were incorrect.
- 12/4/85 - Specialist inspector identifies Level V procedure violation but determines the cable installation to be technically acceptable.
 - OI concludes that the July 1985 Niagara Mohawk response contained false and inaccurate information and constituted careless disregard on their part.
- 1/11/88 - Region I transmits OI Synopsis to Niagara Mohawk and requests Enforcement Conference.



False, Inaccurate Information and Errors in Niagara Mohawk Review:

1. Niagara Mohawk stated that "All personnel confirmed the ... pushing technique of cable installation."

OI found that cables were installed by a combination push/pull technique, that no tension monitoring was used as required for pulling, and that there was no written documentation of the review and approval of the push technique.

2. Niagara Mohawk stated that "No one had knowledge of over-tensioning or breaking cables."

OI found that "in several instances either an NMS cable conductor broke during installation or, at the very least, separated or disconnected from the plastic polywater hose that was used to guide the cable.... Further, they (the instances of breaking or disconnection) were alleged by some to have been related to QIP personnel during their investigative effort."

3. Niagara Mohawk stated that "SWEC Quality Control by Interoffice Correspondence to SWEC Engineering stated that cables installed into the undervessel flex conduits were pushed..." and that "the Quality Control Program was adhered to by qualified personnel...."

OI found that "there is no QC inspection program/criteria for cable "pushing" at NMP-2. When questioned as to what criteria was being applied during inspection, QC personnel advised they were visually observing the physical integrity of the cable. They admitted that they were limited to judging how much tension was applied, and one QC inspector indicated that periodically he had to caution the craft personnel to back off on the amount of pull tension being applied."

4. The Niagara Mohawk review listed the five job categories into which the 20 interviewed people belonged. Craft personnel were absent from the list, but it did list "3 Craft Supervision".

The OI Report noted that "QIP's failure to interview craft personnel involved in the installation effort, and to separate some of the individuals from their supervisors and peers during the interviews, as well as interjecting personal opinions into the interview process, are viewed as contributing to their failure to develop accurate information."



Inspection Summaries and Corrective Actions on NM Cables and QIP:

December 1985 - Technical Review of Cable Installation;
(Specialist inspector for 5 days - IR 85-42)

The inspector reviewed the NM cable installation and observed a mockup cable installation. The IR issued a violation for failing to follow procedures (lack of pull tension monitoring and excessive bend radii). The inspector concluded that NM cables had been pulled (based on 2-3 breaks reported in cable attachment loops) and that there was no installation procedure for push installations. Based on the demonstration the inspector concluded that using the lubrication guide tube, it was not possible to install NM cable without pulling but that the pull force was acceptable. He found that the NM cable could be installed by pushing alone when there was no lube tube.

January 1986 - Review of QIP;
(5 Man team for 5 days - IR 86-04)

The team reviewed QIP, its operation, its review of specific concerns, and its perception by workers. The team found numerous positive aspects and numerous weaknesses, including review of potential wrongdoing, qualification of investigators, and documentation. The team concluded that the program was perceived positively by workers. Overall, the team concluded that all 76 cases reviewed by the team had been ultimately dispositioned adequately.

June 1986 - Followup Review of QIP;
(SRI and Section Chief for 2 days - IR 86-29)

The review focused on the progress toward correcting the previously noted weaknesses. The review noted Niagara Mohawk's responsiveness in making improvements in QIP based on the team's assessment. Particular improvement was noted in the process for handling of potential wrongdoing issues.

September 1986 - Review of QA Program Concerns Under QIP Review;
(4 Man team for 5 days - IR 86-52)

Region I had become aware of programmatic quality control (QC) concerns raised by QC inspectors to QIP. Because of the impending licensing of Unit 2, the team reviewed the adequacy of the Quality Assurance Program in parallel with the QIP review. The team concluded that there were no hardware deficiencies and that QA overchecks of QC inspection activities had identified and corrected hardware deficiencies.



MARCH 18, 1988

ENFORCEMENT CONFERENCE

NRC OI REPORT 1-85-020

(Q1P INVESTIGATION OF NMS CABLE INSTALLATION)

- INTRODUCTION
- NMPC SUMMARY REPORT TO NRC
- BASIS FOR Q1P INVESTIGATION
- NMPC COMMITMENT LETTER TO NRC
- CHRONOLOGY OF EVENTS
- NM RESPONSE TO NRC LETTER 1/11/88

I. Q1P INVESTIGATOR'S EXPERTISE

II. INVESTIGATIVE TECHNIQUES

III. ANALYSIS & PRESENTATION OF FACTS

IV. REVIEW ADEQUACY

V. 7/11/85 REPORT - ADEQUATE SUMMARY OF INVESTIGATION

VI. CONCLUSIONS



NMPC LETTER TO NRC DATED JULY 11, 1985

SUBJECT: ANONYMOUS EMPLOYEE CONCERN - INADEQUATE CONTROL OF CABLE PULLING AND QC OVER THIS ACTIVITY.

SCOPE: PROVIDES SUMMARY REPORT OF RESULTS OF INVESTIGATION BY NM Q1P IN DIRECT RESPONSE TO NRC LETTER OF JUNE 7, 1985 AND NM COMMITMENTS IN LETTER TO NRC OF JUNE 21, 1985.

CONCLUSION: CABLE PULL INSTALLATION WAS TECHNICALLY SATISFACTORY, QC PROGRAM WAS ADHERED TO AND NO EVIDENCE OF IMPROPER PRESSURE BY SUPERVISION WAS FOUND.

BASIS FOR INFORMATION REPORTED: BACKUP MATERIAL CONTAINED IN Q1P FILES ON THIS INVESTIGATION.



BASIS FOR Q1P INVESTIGATION

NRC REQUEST

NRC LETTER OF JUNE 7, 1985 AND ATTACHED UNSIGNED ALLEGATION LETTER TO NRC DATED 5/20/85.

ALLEGATIONS

- 5/3 & 4 TWO CABLES WERE BROKEN DUE TO EXCESSIVE PULLING TENSION WHILE INSTALLING NMS CABLES.
- ACTION OBSERVED BY SWEC QC INSPECTORS, WITH NO UNSATISFACTORY INSPECTION REPORTS.
- CABLES REATTACHED TO PULLING EQUIPMENT AND INSTALLATION COMPLETED. SEVERAL OTHER CABLES OVERTENSIONED, BUT NOT TO POINT OF BREAKING.
- IMPROPER PRESSURE BY SWEC CONSTRUCTION USED TO PUSH THROUGH IMPROPER INSTALLATION. SWEC CAUSED PERSONNEL TO BE RELIEVED OF DUTIES OR REMOVED FROM THEIR JOB. AFFECTED MEN WERE UNJUSTLY DEALT WITH BY SWEC.

NRC REQUEST OF NM

- REQUEST INVESTIGATE MATTER AND PROVIDE TO NRC PLANS AND SCHEDULE WITHIN ONE WEEK OF RECEIPT OF LETTER.
- INVESTIGATION SHOULD DETERMINE:
 - 1) TECHNICAL ADEQUACY OF INSTALLED CABLE
 - 2) ADEQUACY OF QC COVERAGE OF THE ACTIVITY
 - 3) MEASURES TAKEN TO ENSURE THAT NO IMPROPER PRESSURE TO COMPLETE WORK IS PERMITTED.



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NM COMMITMENT LETTER TO NRC OF JUNE 21, 1985

PURPOSE - RESPOND TO NRC SPECIFIC REQUEST OF JUNE 7, 1985 FOR PLANS AND SCHEDULE FOR INVESTIGATION.

STATED PLANS & SCHEDULE

- INVESTIGATION ONGOING - INVOLVES REVIEWING RECORDS RELATED TO NMS CABLE INSTALLATION, I.E.,
 - INSPECTION REPORTS
 - INSPECTION PLANS
 - ENGINEERING SPECS. & E & DCR'S
 - N & D'S
 - INSTALLATION DOCUMENTATION

- INVESTIGATION TO INCLUDE INTERVIEWS WITH APPROPRIATE PERSONNEL FROM THE FOLLOWING GROUPS:
 - QUALITY CONTROL
 - ENGINEERING
 - CONSTRUCTION

- INVESTIGATION WILL DETERMINE:
 - TECHNICAL ADEQUACY OF INSTALLED CABLE
 - ADEQUACY OF QC COVERAGE OF INSTALLATION
 - MEASURES TAKEN TO ENSURE THAT NO IMPROPER PRESSURE TO COMPLETE WORK WAS PERMITTED.

- RESULTS OF COMPLETED INVESTIGATION WILL BE REPORTED TO NRC BY JULY 15, 1985.



CHRONOLOGY OF EVENTS

<u>EVENTS</u>	<u>DATES</u>
1. NM REC'D NRC LETTER DTD. 6/7/85.	6/14/85
2. MGT. MEETING WITH REGION - PIPE SUPPORT REASSESSMENT RESULTS.	6/17/85
3. Q1P INVESTIGATION CONDUCTED.	6/14-7/10/85
4. NM LTR. TO NRC-OUTLINES PLAN & SCHED.	6/21/85
5. NM SENDS NRC INVESTIGATION SUMMARY AND CONCLUSION.	7/11/85
6. NRC RES. INSP. REVIEWS Q1P FILES.	8/85
7. CABLE INSTALL. TEST COMPLETED SATISF.	8/85
8. NM PERFORMED AUDIT OF Q1P.	10/85
9. NRC INSPECTION OF CABLE INSTALLATION (IR 50-410/85-42) (NM RESPONSE 3/3/86, CLOSEOUT 86-28 - 7/11/86).	11-12/85
10 A. NRC OI INVESTIGATOR INTERVIEWED PEOPLE AT NMP-2.	12/85
10 B. SYNOPSIS OF OI REPT. RECEIVED BY NM.	1/88
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11. NRC SP. TM. ASSESSMENT OF Q1P (IR 86-04). NM TOOK ACTION, CLOSEOUT (86-29, PG. 16 AND 17).	1/86
12. NRC SALP REPT. SENT TO NM (PG. 20, CONSTR - LICENSEE INVEST.?).	5/86
13. NRC Sp. Tm. INSP - QC CONCERNS (IR 86-52) (NM TOOK ACTION, CLOSEOUT 87-42, 12/10/87).	9/86
14. NRC SALP REPORT SENT TO NM (PG. 32 ASSURANCE OF QUALITY/Q1P).	8/87



NM RESPONSE TO NRC LETTER 1/11/88

I. THE INVESTIGATOR'S EXPERTISE

- THE Q1P INVESTIGATOR WAS QUALIFIED TO CONDUCT THE INVESTIGATION BY HIS BROAD TECHNICAL BACKGROUND AND NUCLEAR EXPERIENCE.
- Q1P INVESTIGATORS RECEIVED FIVE DAYS OF TRAINING BY OUTSIDE EXPERT IN INTERVIEWING AND INVESTIGATIONS TECHNIQUES.
- THE ISSUES WERE NOT COMPLEX ELECTRICAL MATTERS.
- Q1P INVESTIGATOR TOOK STEPS TO DEVELOP THE NECESSARY KNOWLEDGE.
- CONSULTED WITH QA INDIVIDUALS KNOWLEDGEABLE IN THE AREA.
- Q1P INVESTIGATOR WAS ACCOMPANIED TO THE FIRST INTERVIEW BY KNOWLEDGEABLE INDIVIDUAL FROM NM PROJECTS QA.
- NO INDICATION THAT ANY "LACK OF ELECTRICAL EXPERTISE" AFFECTED THE CONDUCT OF THE INVESTIGATION.

CONCLUSION: THE Q1P INVESTIGATOR HAD SUFFICIENT EXPERTISE AVAILABLE TO ADEQUATELY REVIEW THE MATTER.



NM RESPONSE TO NRC LETTER 1/11/88

II. INVESTIGATIVE TECHNIQUES

- DIFFERENT AND MORE INFORMAL TECHNIQUES THAN OI - QIP FOCUSES ON TECHNICAL ISSUES.
- INVESTIGATION WAS DESIGNED TO BE ADEQUATE FOR ITS INTENDED PURPOSES.
- GROUP INTERVIEWS WERE REASONABLE
 - RECONCILE ANY INCONSISTENT RECOLLECTIONS
 - DEVELOP MOST REASONABLE EXPLANATION
 - MORE EFFICIENT
 - RULED OUT WHERE VERACITY OR INTIMIDATION IS CONSIDERED TO BE AN ISSUE
- CRITERIA FOR DETERMINING WHO TO INTERVIEW INVOLVED INDIVIDUALS HAVING BOTH TECHNICAL AND FIRST-HAND KNOWLEDGE OF EVENTS.
- NINE OUT OF 20 WITNESSES (INCLUDING TWO REPLACED SUPERVISORS) WERE INTERVIEWED INDIVIDUALLY.

CONCLUSION: ADEQUATE INVESTIGATIVE TECHNIQUES WERE UTILIZED TO ACHIEVE THE PURPOSES OF THE INVESTIGATION.



NM RESPONSE TO NRC LETTER 1/11/88

III. THE ANALYSIS AND PRESENTATION OF FACTS

- GOAL WAS TO INVESTIGATE TECHNICAL ADEQUACY OF INSTALLATION, QUALITY CONTROL COVERAGE AND IMPROPER PRESSURE.
- INVESTIGATION WAS LIMITED - DID NOT PERFORM AUDIT OF PROGRAMMATIC MATTERS RELATED TO INSTALLATION.
- FACTS DEVELOPED SUPPORTED CONCLUSIONS REACHED.

- CONCLUSION:
1. THE ANALYSIS AND PRESENTATION OF FACTS WERE ADEQUATE.
 2. WHEN REVIEWED IN CONTEXT OF A SPECIFIC RESPONSE TO A SPECIFIC INQUIRY, THE REPORT WAS NOT MISLEADING OR INCOMPLETE.



NM RESPONSE TO NRC LETTER 1/11/88

IV. REVIEW ADEQUACY

- MANAGER OF Q1P WAS ACTIVELY INVOLVED IN PHASES OF INVESTIGATION.
 - COMMUNICATED ASSIGNMENT TO INVESTIGATOR
 - CONDUCTED PERIODIC REVIEWS
 - REVIEWED FACTS DEVELOPED BY INVESTIGATOR

- DIRECTOR OF QA HAD SUFFICIENT BASIS TO ACCEPT REPORT.
 - REVIEWED REPORT
 - DISCUSSED WITH INVESTIGATOR
 - PERIODIC MONITORING OF INVESTIGATION
 - DISCUSSIONS AND INFORMATION OBTAINED FROM OTHER TECHNICAL PERSONNEL INCLUDING NM QA AND SWEC QA.

- NUCLEAR COMPLIANCE AND VERIFICATION ASSISTED EFFORT.
 - REVIEWED EARLIER DRAFT OF REPORT
 - REVIEW INDICATED ACCURACY OF FACTUAL STATEMENTS

- LEGAL REVIEW OF LETTER AND SUMMARY REPORT FOR:
 - CLARITY
 - NO MISINTERPRETATION
 - RESPONSIVENESS TO ORIGINAL NRC REQUEST

CONCLUSION: PRIOR TO THE REPORT'S SUBMITTAL, AN ADEQUATE MANAGEMENT REVIEW WAS CONDUCTED.



NM RESPONSE TO NRC LETTER 1/11/88

V. THE JULY 11, 1985 REPORT WAS AN ADEQUATE SUMMARY OF THE INVESTIGATION.

ALLEGATION: PUSHING OF CABLE DURING INSTALLATION WAS DONE WITHOUT PROCEDURE.

- NMPC ADMITTED TO VIOLATION OF NOT CHANGING THE ELECTRICAL SPEC.
- ENGINEERING, QC AND CONTRACTOR REPRESENTATIVES PARTICIPATED IN FIELD DISCUSSIONS AND INITIAL FIELD TRIAL METHODS FOLLOWING MOCK PULL.
- PUSHING METHOD NOT WELL DEFINED (PRIMARILY PUSH VS. PRIMARILY PULL TO INSTALL CABLE).
- WORK CREWS BRIEFED ON METHOD.
- MAY 10, 1985 MEMO DOCUMENTING ACCEPTABILITY OF METHOD USED TO INSTALL CABLE.
- LACK OF PROCEDURE NOT RELATED TO BREAKAGE OR OVERTENSIONING.

ALLEGATION: TENSION MONITORING DEVICE NOT UTILIZED.

- MENTIONED IN REPORT TO NRC OF 7/11/85 AND ALSO PART OF SUPPLEMENT TO N&D 11960.
- NO FIRST HAND KNOWLEDGE OF OVERTENSIONING OR BREAKING CABLES DURING ACTUAL CABLE INSTALLATIONS.
- PROBLEMS DURING "MOCK PULL" NOTED.
- ACKNOWLEDGED TOWLINE AS GUIDE.



NM RESPONSE TO NRC LETTER 1/11/88

V. CONTINUED...

ALLEGATION: QC PERSONNEL DID NOT HAVE SPECIFIC INSPECTION CRITERIA AND PROCEDURES AVAILABLE.

- QC PERSONNEL PERFORMED TO THE NORMAL SWEC QA INSPECTION PLAN.
- TYPICAL ATTRIBUTES INSPECTED ON CABLE INSTALLATION INCLUDED CLEANLINESS, TICKET ISSUANCE, CABLE TYPE, CONDITION AND INTEGRITY OF CABLE, ROUTING, ETC.
- NO EVIDENCE OF OVERTENSION OR BREAKAGE BASED ON INTERVIEWS.
- Q1P INVESTIGATION RELIED ON RESULTS OF CONTINUITY AND INSULATION RESISTANCE TESTING ON INSTALLED CABLE TO BE PERFORMED FOR FINAL ASSURANCE OF ADEQUACY. TESTS WERE WITNESSED BY NM QA AND RESULTS OF TESTS WERE SATISFACTORY.



NM RESPONSE TO NRC LETTER 1/11/88

VI. CONCLUSIONS

1. UNDERLYING CAUSES

- MISUNDERSTANDING AS TO NRC EXPECTATIONS.
- NOT EQUIVALENT TO OI INVESTIGATION.
- NOT INTENDED TO BE EXHAUSTIVE.

2. CORRECTIVE ACTIONS

- NO OPEN TECHNICAL MATTERS.
- INVESTIGATION WAS ADEQUATE.
- REPORT NOT MISLEADING OR INCOMPLETE - IN CONTEXT OF SPECIFIC INQUIRY.
- Q1P WEAKNESSES IDENTIFIED FROM NM AUDIT & NRC SPECIAL TEAM ASSESSMENTS HAVE BEEN CORRECTED AND CLOSED OUT. THESE INCLUDE:
 - IMPROVED FILES AND RECORDS.
 - EXPANDED REPORTING REQUIREMENTS.
 - IMPROVED COMMUNICATIONS & CLOSER COOPERATION BETWEEN Q1P & OTHER NM INVESTIGATION GROUPS.
 - BETTER COMMUNICATION AND FEEDBACK OF RESULTS TO CONCERNEE.
 - IMPROVED PROCESS FOR HANDLING POTENTIAL WRONGDOING CONCERNS.
 - PRIORITIZATION, CLASSIFICATION, STATUSING AND CLOSE OUT MORE STRUCTURED.
 - GREATER INDEPENDENT MANAGEMENT INVOLVEMENT AND REVIEW.



NM RESPONSE TO NRC LETTER 1/11/88

VI. CONTINUED...

- REGARDING FUTURE NRC REQUESTS, NM INTENDS TO STRENGTHEN THE FOLLOWING:
 - DISCUSSIONS WITH NRC ON SCOPE AND CONDUCT OF INVESTIGATION, KIND AND TYPE OF REPORT TO NRC AND BACKUP DOCUMENTATION.
 - DISCUSS RESULTS WITH NRC AND ANSWER ANY QUESTIONS TO MINIMIZE ANY MISUNDERSTANDINGS BETWEEN NM & NRC.

3. IS CURRENT Q1P PROGRAM ADEQUATE?

YES, BASED ON ALL CHANGES AND ENHANCEMENTS IN PRACTICES AND PROCEDURES TO STRENGTHEN Q1P PROGRAM ALREADY TAKEN AND CONFIRMED BY NRC.

- PROVIDES ACCEPTABLE OUTLET TO RAISE SAFETY CONCERNS.
- ALLOWS CONCERNS TO BE PROMPTLY AND EFFECTIVELY ADDRESSED.
- NRC RESIDENT IS ROUTINELY INFORMED OF NEW CONCERNS AND STATUS OF Q1P ACTIVITIES.



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 KANE, W. F. Region 1, Ofc of the Director
 RECIP. NAME RECIPIENT AFFILIATION
 DONLON, W. Niagara Mohawk Power Corp.

SUBJECT: Discusses Investigation Rept 1-85-020 re adequacy of quality first program investigation of circumstances associated w/ installation of certain neutron monitoring sys cables at facility in May 1985.

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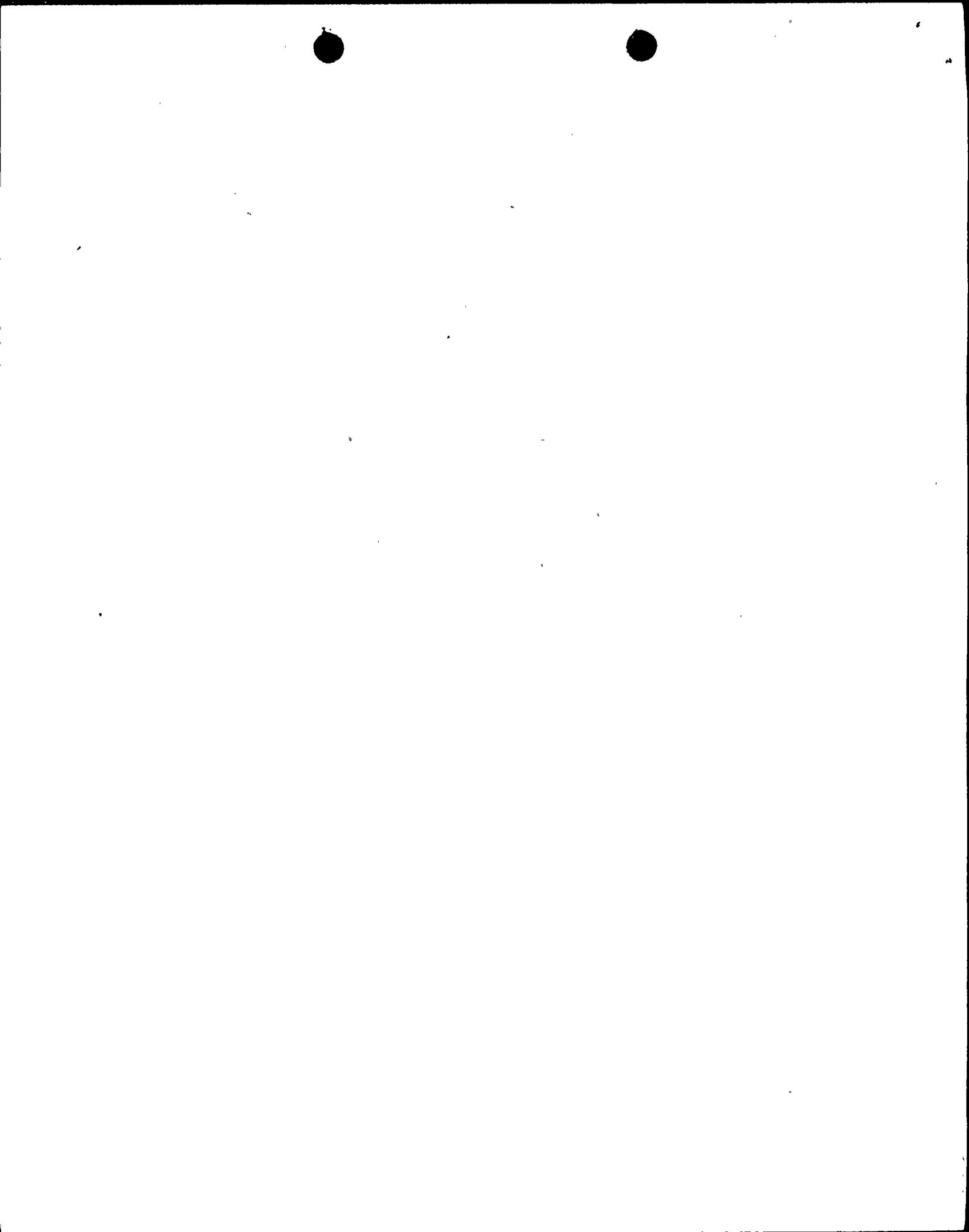
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91 JAN 1988

Niagara Mohawk Power Corporation
ATTN: William Donlon
President
301 Plainfield Road
Syracuse, New York 13212

Gentlemen:

Subject: NRC Office of Investigations (OI) Report No. 1-85-020

This refers to the investigation conducted by the NRC Office of Investigations (OI) concerning (1) the adequacy of your Quality First Program (Q1P) investigation of the circumstances associated with the installation of certain neutron monitoring system (NMS) cables at Nine Mile Point, Unit 2, in May, 1985, and (2) the accuracy of the facts concerning the installation effort as reported in a letter to the NRC dated July 11, 1985. The Q1P investigation had been conducted after the NRC had informed your Executive Director for Nuclear Operations, in a letter dated June 7, 1985, that this office had received an allegation that there was improper installation of the NMS cables due to excessive pulling tension, inadequate quality control (QC) coverage of this activity, and improper pressure by contractor employees to complete installation. The OI Report of Investigation Synopsis is enclosed.

Although sufficient evidence was not developed during the OI investigation to demonstrate that improper pressure had been exerted on contractor employees to complete the installation of the cables, the information developed during the OI investigation demonstrates, at a minimum, that the July 11, 1985 letter to the NRC was incomplete and misleading. That letter, which was signed by the Director of Quality Assurance and reviewed by your Nuclear Compliance and Verification Group, stated that the installation of the cables was technically satisfactory, and the QC Program was adhered to; however, the letter did not indicate that (1) pushing of the cable during the installation was done without a procedure, (2) pulling of the cable during the installation was done without using a tension monitoring device, as required, and (3) Quality Control personnel, although physically monitoring the installation effort as required by the QC program, did not have specific inspection criteria and inspection procedures available to determine the acceptability of the cable installation.

Although the procedural violations associated with the installation effort were previously identified during an NRC inspection conducted in November and December, 1985, (Reference: NRC Inspection Report No. 85-42) and were cited in a Notice of Violation sent to you on January 22, 1986, the NRC is also concerned that the July 11, 1985 response to Region I was incomplete and misleading, and the Q1P investigation which formed the basis for that response was not adequately planned, conducted or evaluated. In particular, (1) the individual responsible for conducting the investigation, although investigating an electrical cable installation activity, was lacking in electrical experience; (2) the investigator used poor investigative techniques, such as interviewing

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personnel in the presence of their supervisors and not interviewing craft personnel; (3) neither the investigator, nor the QIP manager responsible for overseeing the investigator, adequately analyzed and presented the facts obtained during the QIP investigation; and (4) the Director of QA, as well as the others who reviewed the letter, apparently did not recognize these deficiencies.

These deficiencies raise questions regarding the adequacy of your Quality First Program in resolving employee concerns, and the adequacy of your communications with the NRC. Furthermore, the NRC SALP Report sent to you on May 14, 1986 also raised concerns regarding the level of QIP documentation to substantiate closure of employee concerns. In addition, the NRC SALP Report sent to you on August 12, 1987 describes concerns regarding corporate management involvement and internal communications while handling QA concerns brought to the attention of QIP personnel.

In view of these findings, we plan to schedule an enforcement conference to be conducted in the Regional office within the next 30 days. During the conference you should be prepared to discuss (1) the underlying causes of these QIP and communication deficiencies, (2) the corrective actions taken or planned to correct these deficiencies and prevent recurrence, and (3) the reasons the NRC should believe that your QIP program now provides an acceptable outlet for allowing employees to raise safety concerns, and for having these concerns promptly and effectively resolved. When you have reviewed the enclosed Report Synopsis and are prepared to discuss its findings please contact us to arrange the date and time for the conference.

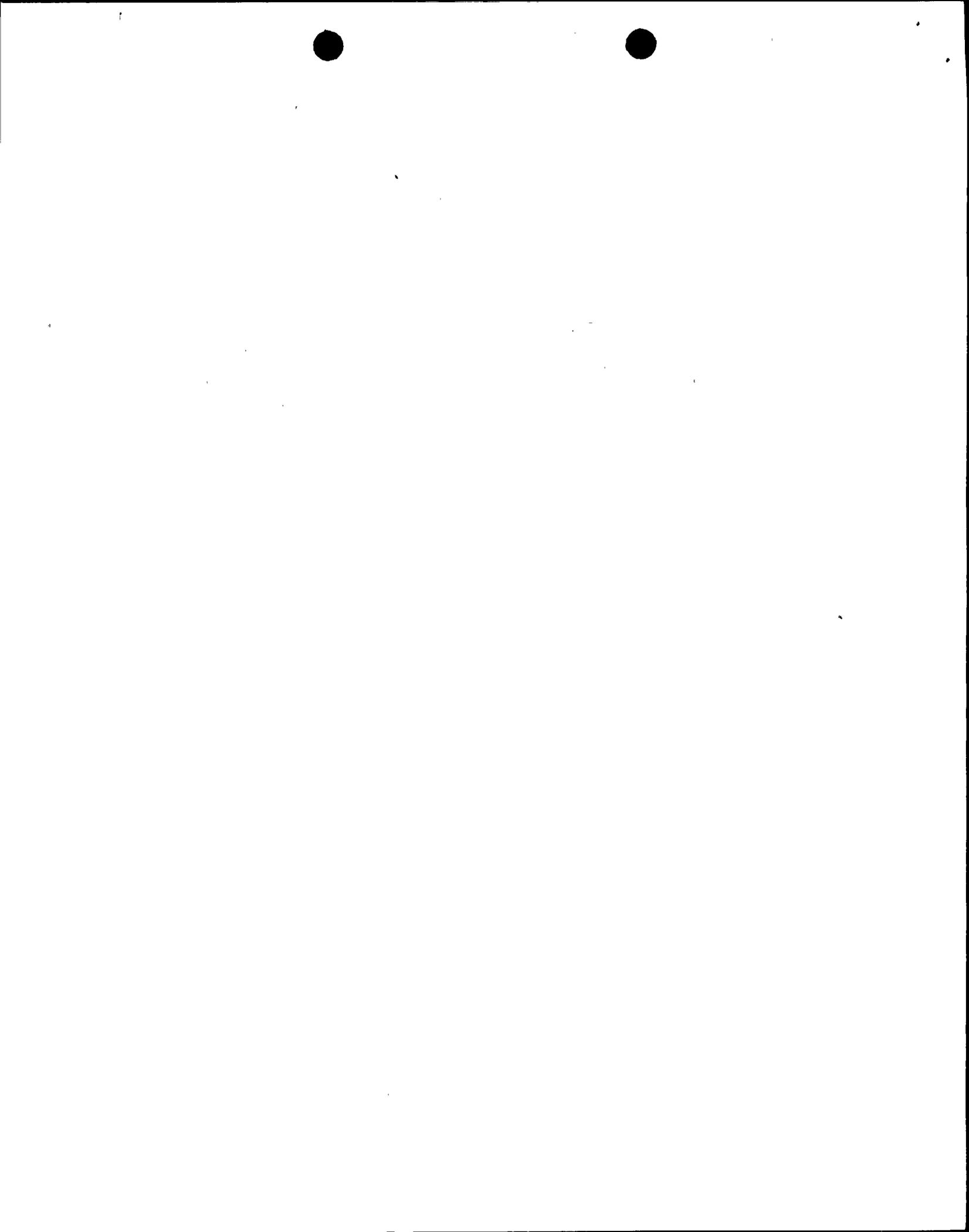
Your cooperation with us in this matter is appreciated.

Sincerely,

Original Signed By:

William F. Kane, Director
Division of Reactor Projects

Enclosure: As Stated



11 JAN 1988

cc:

Connor & Wetterhahn
John W. Keib, Esquire
J. A. Perry, Vice President, Quality Assurance
Troy B. Conner, Jr., Esquire
C. V. Mangan, Senior Vice President - Nuclear
T. E. Lempges, Vice President, Nuclear Generation
T. W. Roman, Station Superintendent, Unit 1
J. C. Aldrich, Superintendent of Operations, Unit 1
R. G. Smith, Superintendent of Operations, Unit 2
A. Z. Pinter, NMPC, Site Licensing
Director, Power Division
W. Hansen, Manager Corporate Quality Assurance
C. Beckham, Manager, Nuclear QA Operations
T. J. Perkins, General Superintendent
R. B. Abbott, Station Superintendent
Department of Public Service, State of New York
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
NRC Resident Inspector
State of New York



11 JAN 1988

bcc:

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DRP Section Chief
Region I SLO
Robert J. Bores, DRSS
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J. Lieberman, OE
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B. Clayton, EDO - Region I Coordinator
E. Wenzinger, RI
S. Collins, RI
W. Kane, RI
W. Johnston, RI
W. Russell, RI

RI:EO	RI:DRP	RI:DRP	OI:RI	RI:RC
*Holody	*Johnson	*Wenzinger	*CWhite	*Gutierrez
1/ /88	1/ /88	1/ /88	1/ /88	1/ /88

RI:DRP
Kane

1/8 /88

*See previous concurrences



bcc:
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 W. Johnston, RI
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RI:EO Holody <i>MM</i> 12/ /87	^{<i>Dr</i>} RI:DRP Johnson <i>1/4/88</i> 12/ /87	RI:DRP Wenzinger <i>[Signature]</i> 12/6/88	OI:RI CWhite <i>[Signature]</i> 12/6/88	RI:DRP Collins 12/ /88
RI:DRS Johnston 12/ /88	RI:DRP Kane 12/ /88	RI:DRP Guierrez 12/6/88	RI:DRA Allan 12/ /88	RI:RA Russell 12/ /88



ENCLOSURE

SYNOPSIS

The NRC received an anonymous letter, dated May 20, 1985, alleging improprieties in the installation of the Neutron Monitoring System (NMS) cables at Nine Mile Point, Unit 2 (NMP-2). Specifically, it alleged improper management pressure and the over-tensioning and breaking of two cables due to the application of excessive pull tension. On June 7, 1985, the NRC referred this matter back to Niagara Mohawk Power Corporation (NMPC) for resolution of the concerns; whereupon NMPC's Director of Quality Assurance (QA) referred the matter to NMPC's Quality First Program (QIP).

QIP reviewed relevant QC Inspection Reports (IRs), cable pull tickets, and Nonconformance & Dispositions (N&Ds). They also interviewed eight QC personnel, three individuals from engineering, five construction supervisors, one project manager, and three craft supervisors. Some of these were interviewed in groups and, in several instances, in the presence of their superiors. The QIP investigator advised that he received such detailed information from the individuals he interviewed that he felt it was unnecessary to question craft personnel, opining that to interview craft level personnel would have been a waste of time.

In a letter dated July 11, 1985, NMPC's QA Manager reported QIP's findings to the NRC. He reported that the installation of the cable was technically satisfactory, the QC program was adhered to by qualified personnel, and there was no evidence of improper pressure by supervision. He added that there would be continuity and insulation resistance testing performed on the installed cable during the month of July, with a QA technician assigned to monitor the tests.

Prior to submission of the July 11 letter, NMPC's Nuclear Compliance and Verification (NC&V) Group at NMP-2 reviewed a draft of QIP's findings. During the OI investigation, NC&V personnel stated that they were directed to assist QIP by reviewing the draft but not requested to perform a formal review and verification effort. Consequently, they advised that they did not do any field work or research to develop supporting documentation for the statements contained within the letter. A system attorney for NMPC also reviewed the July 11 letter; however, he testified that he did not check the facts, assuming they were as stated.

In September 1985, an allegor approached a representative of the New York State Public Service Commission (NYSPSC) raising questions about the adequacy of the QIP investigation into the NMS cable concerns, the breaking and over-tensioning of cables during installation, and pressure on construction workers to complete the installation. On October 3, 1985, the Regional Administrator requested that OI determine the validity of the allegation that the QIP investigation did not accurately report the facts of the incident in the licensee's July 11 letter. The investigation included an examination of the adequacy of the installation and associated procedural compliance, including adherence to the QA program; as well as the question of improper pressure by supervision and the overall adequacy of the licensee's investigative and review effort.



The July 11, 1985, response advised that the concerns about cable pulling appeared to refer to a "mock" pull and "no one" had any knowledge of over-tensioning or breaking the cables. It further described the technique of installation as a "push" technique that had been approved by engineering and utilizing the tow line as a guide. However, OI interviews of QC inspectors, craft personnel and supervisors, some of whom had been previously interviewed by OIP, disclosed that a combination push/pull method was employed to effect cable installation. These individuals also disclosed that, even though pull tension was employed during installation, there was no tension monitoring, as required by the criteria set forth in the cable pulling procedure. Also, there was no written documentation reflecting review and approval of the "push" technique, which most acknowledged was a new method and not the norm for cable installation at NMP-2.

OI interviews revealed mixed recollections regarding a "mock" pull prior to installation. However, interviews with craft and QC personnel disclosed that in several instances either an NMS cable conductor broke during installation or, at the very least, separated or disconnected from the plastic polywater hose that was used to guide the cable and pump lubricating fluid into the conduits. These instances of either a break or disconnection/separation were during installation and not limited to problems encountered during a "mock" or test pull operation. Further, they were alleged by some to have been related to OIP personnel during their investigative effort. Craft personnel also indicated that the amount of pull tension applied during installation varied anywhere from the use of one or two fingers as a guide on the plastic polywater hose, to pulling with one hand and one arm and including the exertion of possibly 80 pounds of pull pressure on some of the more difficult and lengthy runs. The majority of the NMS cables (i.e., Mark No. NJP-29) had a pull tension limit of 35 pounds.

Additionally, there is no QC inspection program/criteria for cable "pushing" at NMP-2. When questioned as to what criteria was being applied during inspection, QC personnel advised they were visually observing the physical integrity of the cable. They admitted that they were limited to judging how much tension was applied, and one QC inspector indicated that periodically he had to caution the craft personnel to back off on the amount of pull tension being applied. QC personnel acknowledged that, although they did not think any cables were damaged during installation, it was impossible to say whether any cables were over-tensioned, because tension monitoring devices had not been used.

The NMPC response of July 11 also advised that the estimated production levels were achieved each day, with the exception of the second shift on May 2/3, which produced considerably less and resulted in the removal of two construction supervisors. It further stated that interviews with the two involved individuals confirmed that low productivity was the cause of this action. OI interviews with craft personnel, including craft foremen, disclosed that a number of individuals felt that there was more pressure than usual associated with the NMS job. They cited the fact that supervisors from Stone and Webster Engineering Corporation (SWEC) and L. K. Comstock (LKC) were around more than usual and seemed to exhibit more interest than normal in the effort.



In addition, the contention that the lack of production after the first night's work resulted in the dismissal of two supervisors on the second shift is not supported by evidence that their production level was significantly less than the other shift on the first day. Testimony from individuals on the first shift indicated that they installed approximately the same number as the second shift that day, and that there were the normal startup difficulties and problems associated with beginning any new job effort. The two individuals who were removed acknowledged that it was their understanding that they were removed because of alleged non-productivity; however, neither agreed that it was a justified or valid contention.

Neither construction nor electrical contractor supervision could produce any documents quantifying the effort on the first night and comparing it with the work by all other shifts. Interviews with craft personnel leave no doubt that the sudden removal of two night shift supervisors after the first night's activities made an impression on the personnel. Most of the OC inspectors and craft personnel, as well as craft supervisors, opined that the sudden removal of the two night shift supervisors was a drastic action, unjustified and unprecedented at NMP-2.

OI's investigative findings indicate that the licensee's July 11, 1985, letter to the NRC contained false and inaccurate information regarding the conditions and atmosphere surrounding the NMS cable installation effort. There is evidence that individuals interviewed by OIP provided information regarding problems encountered during installation (i.e., cable breaks/separations) and pressure associated with the effort, information that should have raised questions concerning the licensee's findings. OI believes that the submission of this erroneous information constitutes at a minimum a careless disregard of the truth and accuracy of that information on the part of the licensee.

OI's investigation also disclosed that procedural violations occurred during cable installation, including a failure to adhere to OA guidelines. The evidence again indicates that these violations resulted at a minimum from careless disregard of procedures and guidelines on the part of the cognizant parties. Although many craft personnel spoke of pressure to complete the installation effort, there is insufficient evidence to conclude that there was improper pressure by supervision. Additionally, OI interviews with cognizant contractor construction and electrical management personnel did not disclose evidence of management pressure from within the licensee's organization.

OIP's failure to interview craft personnel involved in the installation effort, and to separate some of the individuals from their supervisors and peers during the interviews, as well as interjecting personal opinions into the interview process, are viewed as contributing to their failure to develop accurate information. In addition, many of the interviewees appear to be the same individuals who would have had a vested interest in protecting themselves against the allegations contained in the anonymous letter of May 20, 1985.

