U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-220/89-24

Docket No. 50-220

License No. DPR-63

Licensee: Niagara Mohawk Power Corporation
301 Plainfield Road
Syracuse, New York 13212

Facility Name: Nine Mile Point, Unit 1

Inspection at: Scriba, New York

Inspection conducted: September 26 - 29, 1989

Inspectors: N. Conicella, Operations Engineer
R. Temps, Resident Inspector

K. J. Cornelius For T. Walker — 11/14/89
T. Walker, Senior Operations Engineer — Date

Approved by: Gordon Q Rich — 11-14-89
for R. Conte, Chief, BWR Section, Operations Branch, DRS — Date

Executive Summary

This was a special announced inspection which assessed the Nine Mile Point Unit 1 operator proficiency and use of facility procedures, primarily Emergency Operating Procedures (EOPs), during emergency situations and transients. The performance of two on-shift operating crews was evaluated using NRC developed scenarios on the Nine Mile Point Unit 1 plant specific simulator.

No violations or deviations were identified. Operator performance in the areas of crew communications and definition of duties, assignments, and responsibilities was improved compared to performance during a previous NRC inspection in this area. Both of the crews that were evaluated were determined to be satisfactory.

One Station Shift Supervisors (SSS) and one Assistant Station Shift Supervisor (ASSS) did not demonstrate satisfactory performance in the use of EOPs. The same ASSS was also unsatisfactory in performing the duties of the Shift Technical Advisor (STA). All other individuals performed satisfactorily, including one individual that had not demonstrated satisfactory performance in a previous evaluation.

Certain crew weaknesses (discussed in section 2.3.2 of this report) were observed that appear to be similar to weaknesses observed during the evaluations in May, 1989. This indicates that the licensee's corrective actions in these areas may not have been completely effective.

Five unresolved items related to the maintenance of operator licenses and Emergency Operating Procedures were closed based on the results of this inspection and inspector review of documentation provided to the NRC. Three unresolved items related to the maintenance of operator licenses were updated, but not closed pending licensee response to the Notice of Violation issued on September 22, 1989.

The inspection of the implementation of NRC Bulletin 88-07 on power oscillations is documented in section 4 of this report. No violations were identified. A few minor discrepancies, mostly clerical in nature, were identified in the procedures that were changed to address power oscillations. Training on power oscillations was not complete at the time of the inspection. Observations during the evaluations of operator performance on the simulator indicated that the training provided has been effective.

DETAILS

1.0 Persons Contacted

Licensee Representatives

* L. Burkhardt, Executive Vice President Nuclear Operations
* J. Willis, General Superintendent
+ * K. Dahlberg, Station Superintendent Unit 1
+ * R. Randall, Operations Superintendent
* W. Bandla, Assistant Superintendent Operations
+ * M. Peifer, Manager Nuclear Services
+ * A. Rivers, Superintendent Training
+ * R. Seifried, Assistant Superintendent Training
+ * R. Sanaker, Supervisor Operations Training Unit 1
* S. Burton, Training Instructor
+ * M. Peterson, Training Instructor
* M. Colomb, Manager Regulatory Compliance
* D. Straka, Regulatory Compliance
D. Coleman, Assistant Supervisor Reactor Analyst

U.S. Nuclear Regulatory Commission

+ J. Wiggins, Chief, Projects Branch
+ R. Gallo, Chief, Operations Branch, DRS
+ R. Conte, Chief, BWR Section, Operations Branch, DRS

* Denotes those present for the exit meeting on September 29, 1989.
\+ Denotes those who participated in the telephone conference call on October 4, 1989.

2.0 Operator Evaluations

2.1 Overview of Evaluations

Inspection Report 50-220/89-13 identified one shift crew and one individual that did not demonstrate satisfactory performance when operator proficiency and ability to use facility procedures were evaluated during the week of May 22, 1989. Generic (crew) weaknesses were noted during the May 1989 evaluations, specifically in the areas of crew communications and definition of duties, assignments, and responsibilities.

The licensee, in a letter dated September 14, 1989, responded to the inspection findings. The licensee stated that the crew and individuals that did not demonstrate satisfactory performance would be ready for re-evaluation by the NRC during the week of September 25, 1989.

The NRC conducted the followup assessment of Nine Mile Point Unit 1 operator proficiency and use of facility procedures during the week of September 25, 1989. The NRC developed scenarios to be run on the Nine Mile

Point 1 plant specific simulator to determine if previously identified weaknesses had been corrected. The NRC verified the adequacy of these scenarios prior to their use with assistance of facility representatives from the training and operations departments. These individuals also assisted in operating the simulator during the NRC evaluations. All individuals that had access to the scenarios prior to or during the evaluations signed security agreements to ensure there was no compromise of the evaluations.

The acceptance criteria used during the evaluations were identical to the criteria used during the previous evaluations in May 1989. Specific acceptance criteria were used for the SSS, the ASSS, and for the crew (including the SSS and ASSS). The criteria used are included as Attachment 1.

Each crew participated in two scenarios. Following each scenario the NRC observed the crew self critique their performance and then held additional discussion to clarify NRC observations during the scenarios.

2.2 Summary of Evaluation Results

The following table summarizes the results of the NRC assessments of Nine Mile Point 1 operator performance. The details to support the results are discussed in subsequent sections of this report. Satisfactory performance was determined by use of the acceptance criteria described in Attachment 1.

	TOTAL NO. EVALUATED	DEMONSTRATED SATISFACTORY PERFORMANCE	DID NOT DEMONSTRATE SATISFACTORY PERFORMANCE
STATION SHIFT SUPERVISOR	2	1	1
ASSISTANT STATION SHIFT SUPERVISOR	2	1	1
CREW	2	2	0

2.3 Crew Strengths and Weaknesses

The following section discusses the strengths and weaknesses observed during the NRC evaluations. These strengths and weaknesses were generally observed in both crews. Some of the weaknesses identified appear to be similar to weaknesses identified in Inspection Report 50-220/89-13 which documents the evaluations administered in May 1989.

The repeated weaknesses indicate that the licensee's actions to correct the observed weaknesses may not have been completely effective.

2.3.1 Crew Strengths

- Communication practices generally improved compared to the observations from the previous evaluation. There were very few examples of improper communication practices and most of the improper communications that did occur were corrected by other crew members. Communication practices did not deteriorate as the scenarios became more challenging. Most of the communications during the scenarios adhered to the practices prescribed in Operations Department Instruction (ODI) 1.06, Operational Voice Communications.

- Crew interactions, including definition of crew duties, assignments and responsibilities improved compared to the observations from the previous evaluation. Both crews used the Chief Shift Operator (CSO) effectively and senior reactor operator (SRO) responsibilities were not performed by reactor operators (ROs). The role of the ASSS varied between the two crews observed, but this was determined to be an individual weakness of the ASSS who did not satisfactorily perform the STA function.

- The ability of the SSSs to effectively command and control activities of the crew during transient and emergency situations was noted as a strength.

- All ROs observed appeared to be proficient at control board manipulations.

2.3.2 Crew Weaknesses

- Neither crew adequately assessed the impact on the plant when a Reactor Protection System (RPS) bus that supplied power to various instruments and controls was de-energized. Failure to determine whether instrumentation was accurate or inaccurate resulted in confusion among the crew and complicated the recovery from the transient. This weakness was similar to an observation from the previous evaluation that the crews did not always assess what equipment was affected when a power board (electrical distribution bus) was de-energized. It appears that the licensee's corrective actions in this area were focused too narrowly to fully correct the deficiency. Procedure revisions and training to correct this deficiency did not address all types of electrical distribution busses.

- The operators did not always use all available information for diagnosing equipment failures and events. For example, one crew determined that a single recirculation pump had tripped when a failure of the master recirculation flow controller occurred because they looked at only one of the five recirculation pumps. The other crew did not recognize that a steam leak was occurring in the drywell because they did not look at drywell humidity. The same observation was noted during the May 1989 evaluation.

According to the licensee, use of all available indications to perform diagnoses has been addressed in training on an on-going basis. It appears that continued emphasis in this area is needed to remediate this weakness.

- The operators were occasionally slow to recognize changes in plant status, particularly changes in reactor vessel level trends. This finding was similar to the observation from the May 1989 evaluation that changes in plant status and conditions, and updates on key parameters were inconsistently provided or requested by the crews. This aspect of the weakness in communications was not addressed in the licensee's response to the observed weaknesses. The corrective action included stressing strict adherence to ODI 1.06, Operational Voice Communications, but this instruction does not address providing or requesting information on plant status. It appears that the licensee's corrective action in this area did not address all aspects of the identified weakness.

2.4 Individual Weaknesses

One SSS and one ASSS did not demonstrate satisfactory performance due to individual weaknesses or errors. As described below, both individuals were unsatisfactory in the use of procedures. Additionally, the ASSS did not satisfactorily perform the STA function.

Following a simulated Loss of Coolant Accident (LOCA), actions were being taken in accordance with EOP-10, Drywell Flooding, to restore water level in the reactor vessel and to flood the primary containment. With water level increasing, at approximately -120 inches vessel level, the SSS directed that injection via the feedwater system be secured. When the injection source was secured, the reactor vessel water level began to decrease. This action was not in accordance with EOP-10, which directs the SRO to wait until drywell water level reaches 0 inches (which corresponds to 0 inches reactor vessel water level) before securing any injection sources. During the post-scenario critique, the SSS stated that he secured the injection source because he was concerned about exceeding the Torus Load Limit (specified in the actions for torus level control in accordance with section 7 of EOP-4, Primary Containment Control). The SSS did not heed the caution in EOP-1, General Instructions, which states that a direction to flood the drywell in accordance with EOP-10 overrides the torus water level control actions specified in EOP-4, section 7. The SSS was determined to be unsatisfactory in the use of procedures because the procedural violation, termination of drywell flooding below the level specified in the EOPs, was a significant error which impeded plant recovery and could have led to unnecessary plant degradation. In this instance, the ASSS was fully aware of the fact that the SSS had terminated drywell flooding prematurely. The ASSS concurred with the SSS's action to terminate drywell flooding; and, therefore, the ASSS was also determined to be unsatisfactory in use of procedures.

During the LOCA discussed above, the ASSS directed the actions specified in EOP-4 to protect the primary containment and as a result he was not fully aware of the status of the plant nor of the actions being directed by the SSS. During followup questioning, the ASSS did not know what injection systems were available at the end of the scenario. He was also unaware of many of the actions that had been directed by the SSS in accordance with EOP-2, RPV Control, and EOP-10. During emergency situations, the ASSS is expected to assume the role of STA and provide assessments of plant conditions and recommendations to the SSS. The ASSS must be aware of plant conditions and actions taken in accordance with the EOPs to provide appropriate recommendations. In this case, the ASSS focused on the primary containment and did not provide assessments of overall plant conditions. The ASSS did not adequately provide assessments and recommendations to the ASSS and therefore was determined to be unsatisfactory in fulfilling his responsibilities for assisting the SSS in directing shift operations.

2.5 Simulator Fidelity

In general, simulator fidelity was very good. Enhancements have been made to the plant specific simulator to more accurately model the severe transients that are required to train and evaluate operators on all aspects of the EOPs. Training department personnel were knowledgeable and proficient in operating the simulator.

During validation of the scenarios, a discrepancy was discovered between the control room panel configuration and the controlled drawings for the Emergency Condensor (EC) Vent radiation monitors. As a result, one of the prepared scenarios could not be used for the evaluations. The licensee investigated the problem and determined that the drawings and the simulator model were incorrect and that the control room panel configuration was correct. A deficiency report was initiated to correct the simulator model of EC Vent radiation monitor configuration.

3.0 Review of Unresolved Items

Several unresolved items identified in previous NRC inspections were reviewed as part of this inspection. The results of these reviews are as follows:

- Open (220/88-10-01, 220/88-10-02 and 220/88-10-05): Incomplete requalification training, failure to notify the Station Superintendent of missed training, and effectiveness of the Quality Assurance program in identifying and correcting deficiencies in the requalification program. These issues were determined to be violations of NRC requirements. The violations are discussed in the Notice of Violations (NOV) issued on

September 22, 1989. These items are open pending review of the licensee's response to the NOV.

- Closed (220/88-10-03): Deficiencies in management involvement in assuring requalification program effectiveness and compliance. The licensee revised Nuclear Training Procedure (NTP) 11, Licensed Operator Retraining and Continuing Training, to address NRC concerns identified in Inspection Report 50-220/89-11. NTP-11 has been revised to more clearly define responsibility for ensuring that missed training is completed. The procedure also describes a method for evaluation of operators that meets the intent of performance evaluation. This item is closed based on these findings.

- Closed (220/88-10-04): Omissions in operator license renewal applications. The training department has made changes in their tracking and documentation processes to ensure that information provided on license renewal applications is complete and accurate. The Nuclear Compliance and Verification group performs an independent check of the applications prior to submittal. Additionally, the licensed operators understand their responsibilities with respect to submitting complete and accurate information on their license renewal applications. Based on these corrective actions, this item is closed.

- Closed (220/88-22-05): Lack of Quality Assurance (QA) involvement in the EOP development and review process. Administrative Procedure (AP) 2.0, Production and Control of Procedures, has been revised to include the QA department in the review process for all EOPs. The QA department also observes simulator walkthroughs of the EOPs by plant operators and performs in-plant walkdowns of selected EOPs. Corrective actions have been taken to ensure that QA is effectively involved in the development and review of the EOPs, therefore this item is closed.

- Closed (220/88-22-06): Procurement of safety related versus non-safety related operator training services. Training procedures have been revised to require SRO certification for instructors participating in licensed operator training. The licensee also committed to incorporate the same requirements into all contracts for procurement of licensed operator training instructors. Review of instructor qualifications indicates that the instructors meet the established technical qualifications and are adhering to procedures for maintaining their technical and instructional qualifications. This item is closed based on the above review.

- Closed (220/88-22-08): Concerns as to the adequacy of EOP training. The results of this inspection and the previous evaluation of operator performance in May, 1989 indicate that the licensee is able to adequately train operators in the use of the EOPs. Isolated weaknesses were identified, but no programmatic concerns exist that would indicate that

the operators could not effectively implement the EOPs. This item is closed based on the results of the operator evaluations.

4.0 Inspection of Implementation of NRC Bulletin 88-07 and Supplement 1, BWR Power Oscillations (NRC Temporary Instruction 2515/99)

An inspection was conducted to evaluate the implementation of NRC Bulletin (NRCB) 88-07 and Supplement 1 to this bulletin. At the time of the inspection, the licensee had not completed implementation of the actions specified in Supplement 1. In a letter dated February 1, 1989, the licensee committed to completing the implementation of the bulletin prior to restart of Nine Mile Point Unit 1.

4.1 Procedural Implementation

The inspectors reviewed the procedures that were written or revised to incorporate guidance on power oscillations and discussed these changes with the reactor analyst responsible for implementation of the bulletin. Two procedures were developed to address power oscillation; Special Operating Procedure (SOP) 13, Unexplained Reactor Power Oscillations, and Reactor Operations Instruction (ROI) 3, Thermal Hydraulic Instability. SOP-13 is the governing document that is used to monitor and mitigate power oscillations. ROI-3 provides background information on thermal hydraulic instability. These procedures adequately provide for prompt corrective actions to terminate power oscillations.

A group of STAs reviewed the Operating Procedures (OPs) to identify situations that could result in entry into the restricted zone (the "detect and suppress" region of the power to flow operating map). Temporary changes were made to the identified procedures to include a caution to avoid the restricted zone whenever possible and provide guidance on the procedure to be used if entry into the restricted zone occurs. Temporary changes become permanent changes following SORC approval. Several errors, mostly clerical in nature, were identified in these procedure changes. The only deficiency noted was that the procedure for emergency power reduction, contained in ROI-1, General Reactor Operations Instructions, did not give clear guidance to avoid the restricted zone. The reactor analyst responsible for implementation of the bulletin is aware of the identified errors.

4.2 Installed Instrumentation

Review of the licensee's documentation regarding the adequacy of the instrumentation used to detect power oscillations indicated that the installed instrumentation is adequate for this purpose.

4.3 Training

Review of training documentation indicated that operators were briefed on the LaSalle event in a timely manner. Training was provided in response to NRCB 88-07 during licensed operator requalification training in 1988. Additional training to address Supplement 1 to NRCB 88-07 was ongoing at the time of the inspection.

Observations during the evaluations of the operators on the simulator indicated that the deficiency identified in the May 1989 evaluation concerning an inconsistent approach to avoiding the restricted zone had been corrected. Both crews attempted to avoid the restricted zone and took immediate action to exit the zone when it was entered dur to equipment failures. Both crews inaccurately diagnosed power oscillations and immediately scrammed the simulator. This indicated that the operators were sensitive to detecting power oscillations, but also supported the generic weakness of failure to use all available information to diagnose conditions, since no power oscillations actually occurred during the scenarios. The CSO on both crews reacted before the operators had fully assessed conditions and therefore imposed an unnecessary transient on the plant.

5.0 Exit Meeting

An exit meeting was conducted on September 29, 1989 at the Nine Mile Point Training Center with licensee representatives (listed in section 1 of this report). The inspection scope and findings were summarized at the meeting. Appropriate remediation for the individuals that did not demonstrate satisfactory performance was to be defined and administered by the licensee. The licensee questioned whether the results would have been the same if the same performance deficiencies were observed on a requalification examination administered in accordance with ES-601. The NRC stated that the evaluations had a different purpose than requalification examinations and therefore, the results of the evaluations could not be correlated to evaluations in accordance with ES-601.

6.0 Followup Conference Call

A telephone conference call between NRC and licensee representatives (listed in section 1 of this report) was conducted on October 4, 1989 to discuss the results of the evaluations of operator performance. As a result, the licensee gained a better understanding of the evaluation criteria used during the evaluations and the nature of the identified individual and crew weaknesses.

Attachment 1

UNDERSTANDING/INTERPRETATION OF ANNUNCIATOR/ALARM SIGNALS

DID THE CREW:

(a) NOTICE and ACKNOWLEDGE alarms, and ATTEND TO alarms in order of their importance/severity?

3	2	1
All alarms that directly related to significant changes in plant conditions were noted	Minor awareness or response difficulties or lapses	Failed to notice and/or extremely slow at responding to significant alarms at critical times; easily distracted by nuisance alarms

(b) Correctly INTERPRET the meaning and significance of alarms and annunciators (including the use of the Alarm Response Procedures, as applicable)?

3	2	1
Crew readily determined what failures/events alarms were indicating	Minor inaccuracies in alarm interpretation but without safety related consequences	Significant misinterpretations, resulting in plant degradation

(c) VERIFY that annunciators/alarm signals were consistent with plant/system conditions?

3	2	1
All necessary verifications performed, including the identification of erroneous alarms	Minor lapes in alarm verification, but no inappropriate actions taken as a result of inadequate verification	Verification of failed systems was poor or altogether absent

SCORE ON UNDERSTANDING/INTERPRETATION OF ANNUNCIATORS/ALARM SIGNALS:

Satisfactory _____ Unsatisfactory _____

Comments: _____

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DIAGNOSIS OF EVENTS/CONDITIONS BASED ON SIGNALS/READINGS

DID THE CREW:

(a) RECOGNIZE off-normal trends/status?

3	2	1
Timely and accurate recognition of trends even prior to alarms	Recognition of trends at time of, but not prior to, sounding of alarms	Failed to recognize trends, even after sounding of alarms and annunciators

(b) USE INFORMATION and use REFERENCE MATERIAL (prints, books, charts) to aid in the diagnosis/classification of events and conditions?

3	2	1
Correct, timely use of information and reference material led to accurate diagnoses	Minor errors by crew in use or interpretation of information and reference material	Failure to use reference material, misuse/misinterpretation of information resulted in improper diagnoses

(c) Correctly DIAGNOSE plant conditions based on those control room indications?

3	2	1
Diagnoses by crew were accurate and timely	Minor errors/difficulties in diagnoses	Faulty diagnoses resulted in incorrect control manipulations

SCORE ON DIAGNOSIS OF EVENTS/CONDITIONS BASED ON SIGNALS/READINGS.

Satisfactory _____ Unsatisfactory _____

Comments: _____

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UNDERSTANDING OF PLANT/SYSTEMS RESPONSE

DID THE CREW:

(a) LOCATE and INTERPRET control room indicators correctly and efficiently to ascertain and verify the status/operation of plant systems?

3	2	1
Accurate and efficient instrument location & interpretation by all crew members	Minor errors in locating or interpreting instruments and displays; some crew members required assistance	Serious omissions delays or inaccuracies made in instrument interpretation

(b) Demonstrate an UNDERSTANDING of how the plant, systems, and components operate, including setpoints, interlocks, and automatic actions?

3	2	1
All crew members demonstrated thorough understanding of how systems/components operate	Minor instances of errors due to gaps in crew knowledge of system/component operation; some crew members required assistance	Inadequate knowledge of system/component operation resulted in serious mistakes or plant degradations

(c) Demonstrate an understanding of how their ACTIONS (or inaction) affected system/plant conditions?

3	2	1
All members understood the effect that actions or directives had on plant/system conditions	Actions or directives indicated minor inaccuracies in understanding by individuals, but actions were corrected by team	Crew appeared to act without knowledge of or disregard to, effect on plant

SCORES ON UNDERSTANDING OF PLANT/SYSTEM RESPONSE:

Satisfactory _____ Unsatisfactory _____

Comment: _____

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COMPLIANCE/USE OF PROCEDURES

DID THE CREW:

(a) REFER TO the appropriate procedures in a timely manner?

3	2	1
Crew used procedures as required; knew what conditions were covered by procedures and where to find them	Minor failures by crew to refer to procedures without prompting, but did affect plant status	Failed to correctly refer to procedures when required, resulting in faulty system operation

(b) CORRECTLY IMPLEMENT procedures, including following procedural steps in correct sequence, abiding by cautions and limitations, selecting correct paths on decision blocks, and correctly transitioning between procedures?

3	2	1
Timely, accurate enactment of procedural steps by crew, demonstrating thorough understanding of procedural purposes/bases	Minor instances of misapplication, but corrections made in sufficient time to avoid adverse impact	Importance procedural steps were not enacted correctly, which led to impeded and/or slow recovery or unnecessary degradation

(c) RECOGNIZE EOP ENTRY CONDITIONS and carry out appropriate immediate actions without the aid of references or other forms of assistance?

3	2	1
Consistently accurate and timely recognition and implementation	Minor lapses or errors; individual crew members needed assistance from others to implement procedures	Failed to accurately recognize conditions or execute actions, even with use of aids

SCORE ON COMPLIANCE/USE OF PROCEDURES AND TECHNICAL SPECIFICATIONS:

Satisfactory _____ Unsatisfactory _____

Comments: _____

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CONTROL BOARD OPERATIONS

DID THE CREW:

(a) LOCATE CONTROLS efficiently and accurately?

3	2	1
Controls and indicators were located without hesitation by individual operators	Instances of hesitancy/ difficulty in locating controls by one or more operators	Instances of failure to locate controls jeopardized system status

(b) MANIPULATE CONTROLS in an accurate and timely manner?

3	2	1
Smooth manipulation of the plant within controlled parameters	Minor shortcomings in manipulations, but recovery from errors without causing problems	Mistakes made in manipulating controls caused system transients and related problems

(c) Take MANUAL CONTROL of automatic functions, when appropriate?

3	2	1
All operators took control, and smoothly operatored automatic systems manually, without assistance, thereby averting adverse events	Minor delays and/or prompting necessary before overriding/ operating automatic functions, but plant transients were avoided when possible	Failed to control automatic systems manually, even when ample time and indications existed

SCORE ON CONTROL BOARD OPERATIONS:

Satisfactory _____ Unsatisfactory _____

Comments: _____

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COMMUNICATIONS/CREW INTERACTIONS

DID THE CREW:

(a) EXCHANGE complete and relevant information in a clear, accurate, and attentive manner?

3	2	1
Members informed each other of relevant info. and actively sought and listened to info. from others as/when necessary	Communications generally complete and accurate, but some instances of needing to be prompted, or failing to acknowledge or respond to info. from others	Members did not inform each other of abnormal indications or when performing evolutions; inattentive when important info. was requested or provided

(b)_ INTERACT with other regarding issues/circumstances outside of their individual area of responsibility to facilitate safe plant conditions?

3	2	1
Members assumed responsibility for issues outside their own boards, as appropriate	Members listened to each others conversations in general; major technical errors corrected	Members were inattentive to what was happening around them; poor coordination of activities

(c) MAKE TEAM DECISIONS in a timely, effective manner?

3	2	1
All individuals provided input to decisions. Decisions resulted in early, recuperative action	Major team decisions generally included input from most crew members, but some delays or other problems in reaching effective decisions	Leader or other crew members did not accept input from others, resulting in incorrect or untimely decisions/ directives

SCORE ON COMMUNICATIONS/CREW INTERACTIONS:

Satisfactory _____ Unsatisfactory _____

Comments: _____

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UNDERSTANDING/INTERPRETATION OF ANNUNCIATOR/ALARM SIGNALS

[redacted]ATION SHIFT SUPERVISOR:

[redacted] and ATTEND to annunciator/alarm signals in order of their [redacted]ence/severity?

3	2	1
[redacted] and [redacted], in all [redacted]	Minor difficulties in attending to or prioritizing attention	Failed to attend to/prioritize important alarms; slow response and/or distracted by nuisance alarms.

[redacted]ly INTERPRET the meaning and significance of alarms and [redacted]iators?

3	2	1
[redacted]quickly [redacted] what [redacted]larms were [redacted]	Minor inaccuracies/some delays in alarm interpretation.	Misinterpretations, delays or misuse of ARCs resulted in plant degradation.

[redacted] that annunciator/alarm signals were consistent with plant/system [redacted]ions?

3	2	1
[redacted] [redacted] when [redacted]	Minor lapses in alarm verification, but no inappropriate actions as a result of inadequate verification.	Failed to verify and or improperly verified on important occasions; didn't notice inconsistency between alarms and plant conditions.

[redacted] _____ Unsatisfactory _____

[redacted]

DIAGNOSIS OF EVENTS/CONDITIONS BASED ON SIGNALS/READINGS

Did the STATION SHIFT SUPERVISOR:

(a) RECOGNIZE off-normal trends/status?

3	2	1
Quick and accurate recognition.	Some delays in recognizing off-normal conditions.	Spurious omissions, delays of inaccuracies in recognition.

(b) Ensure the collection of CORRECT, ACCURATE and COMPLETE information and reference material upon which to base diagnoses?

3	2	1
Ensure that all relevant indications and references were checked.	Minor instances of overlooking, overreliance on misinterpretation of indications and or references.	Serious instances of failure to use or heed important information or misuse of data.

(c) Correctly DIAGNOSE plant conditions based on control room indications?

3	2	1
Diagnoses were accurate.	Minor errors/ difficulties in diagnosis	Faulty diagnosis adversely impacted plant status.

Satisfactory _____ Unsatisfactory _____

COMMENTS: _____

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UNDERSTANDING OF PLANT/SYSTEM RESPONSE

Did the STATION SHIFT SUPERVISOR:

(a) INTERPRET control room information correctly and efficiently to ascertain and verify the status/operation of plant systems?

3	2	1
Accurate and efficient information interpretation.	Minor errors in interpreting information.	Serious omissions, delays or inaccuracies in information interpretation.

(b) Remain ATTENTIVE to control room indications?

3	2	1
Regularly scanned indications; anticipated changes in plant conditions due to events in progress.	Sporadic scanning of indications; minor lapses in anticipating predictable changes.	Rarely scanned indications; failed to anticipate predictable changes in plant status.

(c) Demonstrate through directives and actions a thorough UNDERSTANDING of how the PLANT, SYSTEMS, and COMPONENTS operate and interact?

3	2	1
Demonstrated through understanding of how systems/components operate and interact.	Minor instances of errors due to gaps in knowledge of how systems/components operate.	Inadequate knowledge of system/component operation resulted in serious mistakes of plant degradation.

Satisfactory _____ Unsatisfactory _____

COMMENTS: _____

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COMPLIANCE/USE OF PROCEDURES

Did the STATION SHIFT SUPERVISOR:

(a) REFER to correct procedures and procedural steps when appropriate?

3	2	1
Requested/readily located all appropriate procedures as necessary.	Minor lapses in referring to/ locating appropriate procedures.	Failed to correctly refer to procedures in important instances.

(b) USED PROCEDURES CORRECTLY, including following procedural steps in correct sequence, abiding by procedural cautions and limitations, selecting correct paths on decision blocks and correctly transitioning between procedures?

3	2	1
Ensured accurate, timely enactment of procedural steps.	Minor errors, but made necessary corrections in timely fashion.	Significant errors which led to impeded/ slow recovery and/or unnecessary plant degradation.

(c) Ensure the safe efficient IMPLEMENTATION of procedures by the CREW?

3	2	1
Assess Shift Supervisor directions provided to the crew for acceptability. If directions are given to crew inform SS.	Allowed lapses in implementation by the crew.	Read procedures to himself; failed to orchestrate/verify use of procedures by crew members.

Satisfactory _____ Unsatisfactory _____

COMMENTS: _____

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COMMUNICATIONS / CREW INTERACTIONS

Did the STATION SHIFT SUPERVISOR:

(a) Communicate in a clear, easily understood manner?

3	2	1
Communications were timely, clear-cut, and easy to hear and understand.	At times communications were confusing, hard to hear or understand.	Communications were ill-timed, vague and/or difficult to hear of interpret.

(b) Keep crew members and those outside the control room informed of plant status?

3	2	1
Provided others with accurate, pertinent information throughout scenario.	Minor instances of needing to be prompted for info; some incomplete inaccurate info.	Failed to provide needed information.

(c) ASSURES RECEIPT of clear easily understood communications from the crew and others?

3	2	1
Requests information clarification when necessary; understands communications from others.	Minor instances of failing to require or acknowledge info from others.	Failed to request needed info or inattentive when info was provided; serious misunderstanding among the crew.

Satisfactory _____ Unsatisfactory _____

COMMENTS: _____

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DIRECT SHIFT OPERATIONS

Did the STATION SHIFT SUPERVISOR:

(a) Take TIMELY, DECISIVE ACTION when problems arose?

3	2	1
Took early remedial recuperative action when necessary.	Minor instances of failing to take action within reasonable period of time,	Failure to take timely action resulted in deterioration of plant conditions.

(b) Provide TIMELY, WELL THOUGHT OUT DIRECTIONS that facilitated crew performance and demonstrated appropriate concern for the safety of the plant, staff, and public?

3	2	1
Directives enabled safe, integrated crew performance.	Minor instances of incorrect, trivial or difficult to carry out orders.	Directives inhibited safe crew performance; crew had to explain why orders couldn't or shouldn't be followed.

(c) Stay in a position of OVERSITE providing an appropriate amount of Direction and Guidance?

3	2	1
Stayed involved, but without being too intrusive; anticipated crew needs and provided guidance when necessary.	Crew had to solicit assistance on occasion, interfering with their ability to carry out actions.	Lost the big picture; crew had to repeatedly request/provide guidance; failed to verify correct enactment of directives.

(d) SOLICIT and INCORPORATE FEEDBACK from crew to foster an effective, team orientated approach to problem solving/decision making?

3	2	1
Involved crew in problem solving process as appropriate, leading to effective team decision making.	At times, failed to involve crew in decision making when it would have been appropriate, detracting from team orientated approach.	Decisions made without needed crew participation or consultation; crew divisiveness was counter-productive.

UNDERSTANDING/INTERPRETATION OF ANNUNCIATOR/ALARM SIGNALS

Did the ASSISTANT STATION SHIFT SUPERVISOR:

(a) SENSE and ATTEND to annunciator/alarm signals in order of their importance/severity?

3	2	1
Accurately and efficiently, in all instances.	Minor difficulties in attending to or prioritizing attention	Failed to attend to/prioritize important alarms; slow response and/or distracted by nuisance alarms.

(b) Correctly INTERPRET the meaning and significance of alarms and annunciators?

3	2	1
Understood/quickly determined what failures alarms were indicating	Minor inaccuracies/some delays in alarm interpretation.	Misinterpretations, delays or misuse of ARCs resulted in plant degradation.

(c) VERIFY that annunciator/alarm signals were consistent with plant/system conditions?

3	2	1
Ensure proper verification when necessary.	Minor lapses in alarm verification, but no inappropriate actions as a result of inadequate verification.	Failed to verify and or improperly verified on important occasions; didn't notice inconsistency between alarms and plant conditions.

Satisfactory _____ Unsatisfactory _____

COMMENTS: _____

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DIAGNOSIS OF EVENTS/CONDITIONS BASED ON SIGNALS/READINGS

Did the ASSISTANT STATION SHIFT SUPERVISOR:

(a) RECOGNIZE off-normal trends/status?

3	2	1
Quick and accurate recognition.	Some delays in recognizing off-normal conditions.	Spurious omissions, delays of inaccuracies in recognition.

(b) Ensure the collection of CORRECT, ACCURATE and COMPLETE information and reference material upon which to base diagnoses?

3	2	1
Ensure that all relevant indications and references were checked.	Minor instances of overlooking, overreliance on misinterpretation of indications and or references.	Serious instances of failure to use or heed important information or misuse of data.

(c) Correctly DIAGNOSE plant conditions based on control room indications?

3	2	1
Diagnoses were accurate.	Minor errors/ difficulties in diagnosis	Faulty diagnosis adversely impacted plant status.

Satisfactory _____ Unsatisfactory _____

COMMENTS: _____

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UNDERSTANDING OF PLANT/SYSTEM RESPONSE

Did the ASSISTANT STATION SHIFT SUPERVISOR:

(a) INTERPRET control room indicators correctly and efficiently to ascertain and verify the status/operation of plant systems?

3	2	1
Accurate and efficient instrument and display interpretation.	Minor errors in interpreting instruments and displays.	Serious omissions, delays of inaccuracies in instrument and display interpretation.

(b) Remain ATTENTIVE to control room indications?

3	2	1
Regularly scanned indications; anticipated changes in plant conditions due to events in progress.	Sporadic scanning of indications; minor lapses in anticipating predictable changes.	Rarely scanned indications; failed to anticipate predictable changes in plant status.

(c) Demonstrate through directives and actions a thorough UNDERSTANDING of how the PLANT, SYSTEMS, and COMPONENTS operate and interact?

3	2	1
Demonstrated through understanding of how systems/components operate and interact.	Minor instances of errors due to gaps in knowledge of how systems/components operate.	Inadequate knowledge of system/component operation resulted in serious mistakes of plant degradation.

Satisfactory _____ Unsatisfactory _____

COMMENTS: _____

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COMPLIANCE/USE OF PROCEDURES

Did the ASSISTANT STATION SHIFT SUPERVISOR:

(a) REFER to correct procedures and procedural steps when appropriate?

3	2	1
Requested/readily located all appropriate procedures as necessary.	Minor lapses in referring to/ locating appropriate procedures.	Failed to correctly refer to procedures in important instances.

(b) USED PROCEDURES CORRECTLY, including following procedural steps in correct sequence, abiding by procedural cautions and limitations, selecting correct paths on decision blocks and correctly transitioning between procedures?

3	2	1
Ensured accurate, timely enactment of procedural steps.	Minor errors, but made necessary corrections in timely fashion.	Significant errors which led to impeded/ slow recovery and/or unnecessary plant degradation.

(c) Ensure the safe efficient IMPLEMENTATION of procedures by the CREW?

3	2	1
Kept SSS and crew informed of procedural status; got acknowledgement from crew when reading procedures.	SSS occasionally had to question ASSS regarding status; allowed lapses in implementation by the crew.	Read procedures to himself; failed to orchestrate/verify use of procedures by crew members.

Satisfactory _____ Unsatisfactory _____

COMMENTS: _____

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COMMUNICATIONS / CREW INTERACTIONS

Did the ASSISTANT STATION SHIFT SUPERVISOR:

(a) Communicate in a clear, easily understood manner?

3	2	1
Communications were timely, clear-cut, and easy to hear and understand.	At times communications were confusing, hard to hear or understand.	Communications were ill-timed, vague and/or difficult to hear of interpret.

(b) Keep crew members and those outside the control room informed of plant status?

3	2	1
Provided others with accurate, pertinent information throughout scenario.	Minor instances of needing to be prompted for info; some incomplete inaccurate info.	Failed to provide needed information.

(c) ENSURES RECEIPT of clear easily understood communications from the crew and others?

3	2	1
Requests information clarification when necessary; understands communications from others.	Minor instances of failing to require or acknowledge info from others.	Failed to request needed info or inattentive when info was provided; serious misunderstanding among the crew.

Satisfactory _____ Unsatisfactory _____

COMMENTS: _____

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DIRECT SHIFT OPERATIONS

Did the ASSISTANT STATION SHIFT SUPERVISOR:

(a) Take TIMELY, DECISIVE ACTION when problems arose?

3	2	1
Took early remedial recuperative action when necessary.	Minor instances of failing to take action within reasonable period of time.	Failure to take timely action resulted in deterioration of plant conditions.

(b) Provide TIMELY, WELL THOUGHT OUT RECOMMENDATIONS OR DIRECTIONS that facilitated crew performance and demonstrated appropriate concern for the safety of the plant, staff, and public?

3	2	1
Recommendations or directives enabled safe, integrated crew performance.	Minor instances of incorrect, trivial or difficult to carry out acions.	Recommendations and directions inhibited performance; crew had to explain why action couldn't or shouldn't be followed.

(c) Stay in a position of OVERSITE providing an appropriate amount of Direction and Guidance?

3	2	1
Stayed involved, but without being too intrusive; anticipated crew needs and provided guidance when necessary.	Crew had to solicit assistance on occasion, interfering with their ability to carry out actions.	Lost the big picture; SSS had to repeatedly request assistance; failed to verify correct enactment of SSS directives.

(d) SOLICIT and INCORPORATE FEEDBACK from crew to foster an effective, team orientated approach to problem solving/decision making?

3	2	1
Involved crew in problem solving process as appropriate, leading to effective team decision making.	At times, failed to involve crew in decision making when it would have been appropriate, detracting from team orientated approach.	Decisions made without needed crew participation or consultation; crew divisiveness was counter-productive.