

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-315/OL-92-01

Docket Nos. 50-315; 50-316

Licenses No. NPR-58; NPR-74

Licensee: Indiana Michigan Power Company
1 Riverside Plaza
Columbus, OH 43216

Facility Name: D. C. Cook Nuclear Power Plant

Examination Administered At: D. C. Cook

Examination Conducted: Weeks of January 6, 20 and 27, 1992

Chief Examiner: T. Burdick for
K. M. Shembarger

2/19/92
Date

Approved By: T. Burdick
T. M. Burdick, Chief
Operator Licensing Section 2

2/19/92
Date

Examination Summary

Examination administered during the weeks of January 20 and 27, 1992 (Report No. 50-315/OL-92-01) to eight reactor operators and twelve senior reactor operators. In addition, during the week of January 6, 1992, an initial simulator retake exam was administered to one reactor operator candidate and an initial written retake exam was administered to one reactor operator candidate.

Results: All individuals and crews passed the requalification examinations. Both initial reactor operator candidates passed the retake examinations.

Generic Strengths and Weaknesses:

Program: The D.C. Cook Requalification Program exam banks contain some weaknesses, primarily in the Part A and Part B question banks. Overall, the exam banks satisfy the recommendations in NUREG-1021. Administration of the exam by the training staff was very effective and efficient.

- JPM administration both in the plant and on the simulator went well. JPM evaluators should provide the cues to the operator as written to ensure exam consistency and to ensure inadvertent prompting/cueing is avoided. In addition, JPM evaluators should ensure followup questions are asked when the keyed response is not obtained and a more detailed response is all that is needed.
- One question was deleted from a static exam following exam administration. The facility should ensure that if concerns about a question are raised following exam preparation week, the concerns are brought to the attention of the NRC Chief Examiner to allow the issue to be addressed and resolved prior to exam administration.
- The operators exhibited several knowledge and implementation weaknesses in regards to Emergency Operating Procedures during the dynamic simulator section of the exam (see section d. of this report for details).
- Crew communications were weak at times during the dynamic simulator exam, which resulted in required actions being either delayed or not performed.
- Some operators had difficulty during event classification with the use of the Emergency Plan Classification Procedure that currently exists. Improvements in the wording of the procedure would allow the intent of the procedure to be more clear, and therefore would be an asset to the senior reactor operators during procedure implementation.
- Overall, administration of all sections of the exam went very smooth. Exam security was maintained at all times by the facility. The depth in the training organization allowed for the use of multiple evaluators, which allowed the exams to progress with minimal delays.

Operators: The operators exhibited several Emergency Operating Procedure knowledge and implementation weaknesses, which resulted in marginal performance during the dynamic simulator exam. In addition, communications between crew members, at times, were weak.

- An operator failed to perform a cooldown of the RCS at a maximum rate during a SGTR event. (This was a weakness that was also identified during administration of the initial retake examination.)

- A crew failed to perform a depressurization of the secondary at a maximum rate during a loss of all AC power event.
- A crew incorrectly transitioned to E-2, FAULTED STEAM GENERATOR ISOLATION and subsequently to E-1, LOSS OF REACTOR OR SECONDARY COOLANT, following a steam line break outside containment and a main steam isolation (which terminated the break and resulted in an increase in pressure in all steam generators).
- A crew was unable to discriminate between an expected depressurization of the secondary due to the effects of cold SI flow during a large break LOCA event with operation of the turbine driven auxiliary feedwater pump, and a depressurization of all steam generators due to all steam generators being faulted. As a result, incorrect transitions to E-2, FAULTED STEAM GENERATOR ISOLATION, and ECA-2.1, UNCONTROLLED DEPRESSURIZATION OF ALL STEAM GENERATORS, were made.
- A senior reactor operator was unaware that during an excessive cooldown event, auxiliary feedwater flow to the steam generators can be reduced to less than 240,000 PPH without implementing FR-H.1, RESPONSE TO LOSS OF SECONDARY HEAT SINK.
- A senior reactor operator was unaware that cooldown of the RCS during a SGTR event must be terminated when 76% level in the pressurizer is reached, even though primary pressure has not yet been reduced to less than secondary pressure.

Although the Emergency Operating Procedure knowledge and implementation weaknesses did not result in adverse consequences during the administration of the scenarios, some of the identified weaknesses led to slow recovery from the events, and had the potential to degrade the condition of the plant.

REPORT DETAILS

1. Examiners

T. Bardell
K. Shembarger

2. Exit Meeting

- a. On January 31, an exit meeting was held. The following personnel were present at the meeting:

W. Nichols, Operations Training
A. Blind, Plant Manager
V. Kincheloe, Training Superintendent
J. Sampson, Operations Superintendent
R. Anderson, Requal Program Administrator
D. Seipel, Operations Training
M. Hierau, STA Supervisor
K. Baker, Assistant Plant Manager Production
W. Burgess, Simulator Supervisor
L. Tatrault, Training Instructor
T. Bardell, NRC Contract Examiner
J. Isom, Senior Resident Inspector
D. Passehl, Resident Inspector
K. Shembarger, NRC Examiner

- b. The following general observations were made by the examiner during examination development and were discussed with the facility:

- (1) Overall, the D.C. Cook Requalification Exam Bank satisfies the recommendations in NUREG-1021. The proposed exam sent to the region contained some weaknesses, such as Part A type exam questions located in the Part B section and vice versa, and misapplied critical tasks in the dynamic scenarios and JPMs. In addition, several questions in the Part A exams required modification to make the distractors more plausible.
- (2) The examiner received very good support from the facility exam team members during exam development. Their efforts resulted in very effective and efficient exam weeks.

- c. The following observations were made by the examiner during the exam weeks and were discussed with the facility:
- (1) JPM administration both in the plant and on the simulator went well. JPM evaluators should provide the cues to the operator as written to ensure exam consistency and to ensure inadvertent prompting/cueing is avoided. In addition, JPM evaluators should ensure followup questions are asked when the keyed response is not obtained and a more detailed response is all that is needed.
 - (2) One question was deleted from a static exam following exam administration. The facility should ensure that if concerns about a question are raised following exam preparation week, the concerns are brought to the attention of the NRC Chief Examiner to allow the issue to be addressed and resolved prior to exam administration.
 - (3) The operators exhibited several knowledge and implementation weaknesses in regards to Emergency Operating Procedures during the dynamic simulator section of the exam (see section d. of this report for details).
 - (4) Crew communications were weak at times during the dynamic simulator exam, which resulted in required actions being either delayed or not performed.
 - (5) Some operators had difficulty during event classification with the use of the Emergency Plan Classification Procedure that currently exists. Improvements in the wording of the procedure would allow the intent of the procedure to be more clear, and therefore would be an asset to the senior reactor operators during procedure implementation.
 - (6) Overall, administration of all sections of the exam went very smooth. Exam security was maintained at all times by the facility. The depth in the training organization allowed for the use of multiple evaluators, which allowed the exams to progress with minimal delays.
- d. The NRC preliminary results were discussed with the facility representatives. Although all individuals and crews passed the examinations, several Emergency Operating Procedure knowledge and implementation weaknesses were identified during administration of the dynamic simulator examination. The following are examples of the weaknesses that were observed:
- (1) An operator failed to perform a cooldown of the RCS at a maximum rate during a SGTR event. (This was a weakness that was also identified during administration of the initial retake examination.)

- (2) A crew failed to perform a depressurization of the secondary at a maximum rate during a loss of all AC power event.
- (3) A crew incorrectly transitioned to E-2, FAULTED STEAM GENERATOR ISOLATION and subsequently to E-1, LOSS OF REACTOR OR SECONDARY COOLANT, following a steam line break outside containment and a main steam isolation (which terminated the break and resulted in an increase in pressure in all steam generators).
- (4) A crew was unable to discriminate between an expected depressurization of the secondary due to the effects of cold SI flow during a large break LOCA event with operation of the turbine driven auxiliary feedwater pump, and a depressurization of all steam generators due to all steam generators being faulted. As a result, incorrect transitions to E-2, FAULTED STEAM GENERATOR ISOLATION, and ECA-2.1, UNCONTROLLED DEPRESSURIZATION OF ALL STEAM GENERATORS, were made.
- (5) A senior reactor operator was unaware that during an excessive cooldown event, auxiliary feedwater flow to the steam generators can be reduced to less than 240,000 PPH without implementing FR-H.1, RESPONSE TO LOSS OF SECONDARY HEAT SINK.
- (6) A senior reactor operator was unaware that cooldown of the RCS during a SGTR event must be terminated when 76% level in the pressurizer is reached, even though primary pressure has not yet been reduced to less than secondary pressure.

Although the Emergency Operating Procedure knowledge and implementation weaknesses did not result in adverse consequences during the administration of the scenarios, some of the identified weaknesses led to slow recovery from the events, and had the potential to degrade the condition of the plant.

- e. The following observation was made regarding the initial retake examinations administered during the week of January 6, 1992:
- (1) Facility review of the initial retake written exam in the region went well, as evidenced by the fact that no post exam comments were submitted to the NRC.

REQUALIFICATION PROGRAM EVALUATION REPORT

Facility: D. C. Cook

Examiners: K. Shembarger, T. Bardell

Dates of Evaluation: Weeks of January 20 and 27, 1992

Areas Evaluated: X Written X Oral X Simulator

Examination Results:

	<u>RO Pass/Fail</u>	<u>SRO Pass/Fail</u>	<u>Total Pass/Fail</u>	<u>Evaluation (S or U)</u>
Written Examination	8/0	12/0	20/0	S
Operating Examination				
Oral	8/0	12/0	20/0	S
Simulator	8/0	12/0	20/0	S
Evaluation of facility written examination grading				S

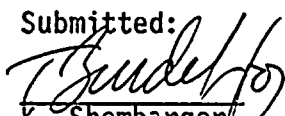
Crew Examination Results:

	<u>Crew 1 Pass/Fail</u>	<u>Crew 2 Pass/Fail</u>	<u>Crew 3 Pass/Fail</u>	<u>Evaluation (S or U)</u>
Operating Examination	Pass	Pass	Pass	S
	<u>Crew 4 Pass/Fail</u>	<u>Crew 5 Pass/Fail</u>	<u>Crew 6 Pass/Fail</u>	
	Pass	Pass	Pass	

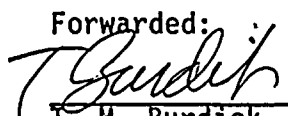
Overall Program Evaluation

Satisfactory

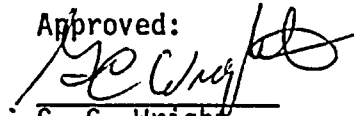
Submitted:


K. Shembarger
Examiner
02/18/92

Forwarded:


T. M. Burdick
Section Chief
02/18/92

Approved:


G. C. Wright
Branch Chief
02/18/92

SIMULATION FACILITY REPORT

Facility Licensee: D. C. Cook

Facility Licensee Docket No. 50-315

Operating Tests Administered On: Weeks of January 6, 20 and 27, 1992

During the conduct of the simulator portion of the operating tests, the following items were observed:

ITEM

DESCRIPTION

None