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June 2, 1972

Dudley Thompson, Chief, Operational Safety Branch, L

MONTICELLO MANAGEMENT APPRAISAL

From May 22 through May 26, 1972, I was a member of the inspection team making a management inspection of Northern States Power (NSP) Monticello Plant. Following are the team members:

Max Hildreth, CO, Headquarters, team leader
Robert Dodds, CO, San Francisco
Robert Carlson, CO, Newark
Carl Seyfrit, CO, Chicago, assigned inspector
Leo Higinbotham, CO, Newark
John Sears, OSB, L

It is planned that some team members will continue the inspection by visiting NSP's home office on June 7-8, 1972, and a final report to NSP top management will be made by some team members, and possibly other Regulatory representatives, a week or two later.

For management inspections of this type, CO recommends that each team member be excused from other work so that he can devote 5 man-weeks to preparation; inspection, appraisal and report writing. In this instance, Carl Seyfrit assembled, for each team member, 2 volumes (each as big as the Washington phone book) of back up material. Max Hildreth broke the total job up into a number of different areas of interest, and assigned each man a portion of these jobs. I was assigned to the team only 2 days before the inspection so that I did not have the back up material. My assigned areas were Emergency Plans, Industrial Security, Adequacy of Abnormal Operating Procedures, and Competence of Operating Crews. A brief summary of my findings follows.

1. Emergency Plans

I visited both the Principal and the Alternate Emergency Assembly Shelters, the Control Room, the Emergency Room of the Monticello Big Lake Hospital, examined emergency kits, reviewed NSP correspondence with local agencies, and reviewed a draft Minnesota State Plan.

Not all local agencies have confirmed their agreement to assist in writing. No decisional aids are available (e.g. isopleths). Hospital arrangements appear to be adequate. The only high volume

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air samplers available must be operated on 110 VAC, and the only vehicles with 110 VAC power outlets are stationed at St. Claud approximately half an hours travel from the plant.

I urged the Health Physicist to rewrite the plan to comply with all aspects of 10 CFR 50 Appendix E and its Guide, and suggested that he consult the Connecticut Yankee plan for a model. I also suggested that he consider procuring battery operated air samplers.

2. Security Plan

Monticello's original plan included only a lighted perimeter fence and a key system for opening gates in the fence and doors in the building.

Monticello now employs two armed Pinkerton guards on shift, around the clock, 7 days a week. All outside doors and gates are locked. The shift supervisor controls all keys.

Plant physical layout has cooling towers near the river, then the security fence with one light at mid-point. Just inside the fence is a one story warehouse which extends nearly the whole length of the fence, except for truck access space on both sides of the warehouse. The guard's shack is about 100 feet still further into the security area, about even with one end of the warehouse. I visited the site about 3 a.m. on a rainy night when the effluent from the cooling towers was blowing toward the warehouse. The whole area was blanketed in vapor and concealment appeared to be no problem.

The fence at the intake structure stopped about 10' short of the end of the sea wall on each side of the intake. The purpose of the blank space was said to afford access to clean out the area in front of the intake.

I made the following suggestions.

a. A derailer should be installed on the tracks entering the plant area. Monticello agreed.

b. The fence at the intake structure should be extended to complete the barrier. Other arrangements can be made for cleaning in front of the intake. NSP's Security Manager agreed and stated that the DOD inspector had made the same suggestion.

c. The fence behind the warehouse is vulnerable. The warehouse itself can be used as a barrier if a fence is installed from each of its ends across the truck access space. The NSP Security Manager stated that he would have a response to this idea within two weeks.

3. Adequacy of Abnormal Operating Procedures.

Each of the transients analyzed in the FSAR is covered by an Abnormal Operating Procedure, in a separate section of the Operations Manual.

The procedures in the Operations Manual are categorized by system, and each system includes a tabulation of annunciator alarms relative to that system. The tabulation includes the name of the system and sub-systems, the location of the annunciator unit on the panel, the location and type of sensor, and the corrective action to be taken in response to the alarm. Operators are not required to memorize the immediate corrective action in response to alarms. No drills are conducted, on shift, on either abnormal operating procedures or responses to alarms. In the summary meeting, I pointed out that such drills would be a requirement in the new version of Technical Specifications.

4. Competence of Operating Crews.

Judgment of competence is subjective. I did this part of my job by evaluating the tools available to the operator and by observing and conversing with all levels of operators during routine operation and during shift change.

Volume A of the Operators Manual contains Administrative Procedures. There is no written procedure describing shift turnover. I observed two shift turnovers, one from days to the 3-11, and one from 3-11 to graveyard. Turnover, in both instances, consisted of a walk through by both operators of instrumentation and controls, a review of log books by both in concert, and finally an extended conversation between the two.

Volume F of the Operators Manual consists of temporary procedures. The original concept of this document was good; however Volume F now consists of 250 procedures, some of which are 2 years old.

The Rad Waste system has a separate Control Room. There have been many minor changes in design since installation. The

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operating procedures are not up to date. The plant is now operated with zero liquid radwaste. The final discharge is a radioactive sludge which is used in a concrete slurry and barreled as solid waste.

I visited the plant at night to observe back shift operations from about 10 p.m. to 3.a.m. This afforded an opportunity to chat privately and informally with rural route operators as I accompanied them on their rounds.

Most surveillance testing is done on the graveyard shift. One shift supervisor encourages lower grade operators to operate the control room knobs and switches during testing. Other shift supervisors and older operators discourage such training. The plant laborers, whose title is nuclear plant helper, and who do the decontamination of the radwaste concrete barrels, feel that their yearly 10-hour training in radiation protection is too academic, and consequently they do not retain the information.

In attempting to evaluate crew competence, I took one incident - the September 5, 1971 scram - and tried to reconstruct the event from documentation. There were many gaps in the documentation. The shift supervisor's log of the shift following the incident had the following final entry "Too busy to keep a good log." I examined the minutes of the meetings of the Plant Operations Committee and the Safety Audit Committee (SAC) relative to the September 5 incident and did further spot-checking through these records. There was more than one instance where the loop of incident, investigation, evaluation and corrective actior was not closed. In discussing the September 5 incident, the SAC noted that an air failure was the initiating event, and that a previous study of the adequacy of the plant air system had resulted in a number of recommendations for improvement, but there had been no follow through in seeing that the recommendations were carried out. There are no controls for the plant air system in the control room, only a recorder. The incident was caused by an error by the auxiliary operator at the air compressorecontrol; the control room operators responded properly.

My evaluation of operating crew competence is best summed up by saying that I had a feeling of confidence in the control room. There appeared to be discipline, immediate response to alarms, good morale, pride in detailed knowledge of the plant, copperation between shifts.

The data logger properly used, is an extremely useful tool. NSP is fortunate in having an extremely competent computer engineer who uses the computer to analyze trends, and who manages to keep the computer on stream except for about two hours per month. There is one problem, since the computer does such a good job, the operator's and shift supervisor's logs suffer. There does not seem to be a good positive policy on what information must be logged.

The Plant Supervisor was responsive in giving each of us his opinion of upper NSP management competence. He thought that the V.P. level had little or no appreciation for nuclear plant problems. He has recently hired 8 young engineers all of whom just passed SRO exams. As yet these engineers do not have clearly defined responsibilities. They may be reserve troops in case of labor problems - this is an IBEW shop; or the hope may be that they will mature into a strong on-site technical support group. The off-site technical support group - under Lee Mayer, Director of Nuclear Support Services, still consists only of Mayer and one engineer. The inspection team visit to the NSP home office on June 7-8 will permit further evaluation of technical support.

Comments on Management Appraisal Effort.

Our team consisted of 6 people. We were almost universally agreed that there were too many of us. The team should consist of no more than 3 mature reactor people, each with an appreciation for the interdependence of management and operator. The assigned CO inspector should not be a member of the team; he is inclined to feel defensive if the team unearths management deficiencies. Detailed inspection of health physics, emergency planning and industrial security, as was done by Higinbotham and Sears, should not be a part of the team effort - these concerns should be covered by regular CO inspections.

There was much overlapping in our efforts because there were so many of us. This resulted in many of us discussing the same topic with the same NSP man, but from a different view point. Some overlap is useful, since a finding by one may be reinforced by anothers investigation. For example, almost all of us found some example of a lack of "gap-closing" on the part of NSP. We all agreed that this was the most serious management deficiency.

My principal contribution was investigation of the lower grade operator situation. I volunteered for this effort, since it did not seem to be emphasized in the team plans. This area is sometimes neglected, but I believe that it is important to get the operator's opinions on how upper and middle management policies are translated into the kind of procedures

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which can be understood and followed. The team members must remind themselves regularly of the goal of the effort - management appraisal - and should not get bogged down in lengthy discussions on whether a particular incident should have been reported, or whether an individual item was or was not a 50.59 item, or whether some words in the Tech Specs should be changed. Tech Specs changes may result from the inspection, but time at the plant should be devoted to finding out how the licensee's controls really work.

A fundamental precept of reactor regulation has always been that the licensee has the primary responsibility for safety. The licensee discharges that responsibility through management controls. The regulator should then fulfill his own responsibility by continuously appraising how licensee management is performing. The interest of the regular inspection program is often focused on specific mechanical problems and management aspects are relegated to the background. Management inspections then are not only useful, but may well be one of the most important features of the Regulatory program. Independence of the inspection auditors must be as complete as possible to insure their objectivity. The final interview with licensee upper management crowns the effort with thorns or gold depending on how the team findings are presented. If there is an overemphasis on legal aspects that only results in top management requiring the plant staff to produce more paper to keep the AEC quiet, then we have failed. If instead the appraisal findings can be presented strictly from the point of view of our mutual interest in safety of operations and results in top management taking the necessary measures to assure itself of the complete validity of all management controls, then the whole effort has been worthwhile.

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