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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of)
)
METROPOLITAN EDISON COMPANY) Docket No. 50-289
) (Restart)
(Three Mile Island Nuclear)
Station, Unit No. 1))

NOTICE TO COMMISSION, APPEAL BOARD
AND LICENSING BOARD

On November 22, 1983, we provided to the Commission, Appeal Board and Licensing Board copies of a report entitled, "An Assessment of the GPU Nuclear Corporation Organization and Senior Management and Its Competence to Operate TMI-1," by Admiral H. G. Rickover, USN, dated November 19, 1983. Admiral Rickover has prepared a Follow-Up Report dated April 19, 1984, a copy of which is enclosed.

Respectfully submitted,

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FOLLOW-UP REPORT
of Assessment of the GPU Nuclear Corporation
Organization and Senior Management
and
Its Competence to Operate TMI-II
by
Admiral H. G. Rickover

19 April 1984

Preface

On 16 and 17 April 1984, my associates and I made a thorough inspection of GPU Nuclear Corporation's undamaged Three-Mile Island plant (TMI-1). This was a follow-up of a previous study and assessment of the management of that plant, the results of which are presented in my report, "Assessment of the GPU Nuclear Corporation Organization and Senior Management and Its Competence to Operate TMI-1," dated 19 November 1983.

Based on the assessment of the GPU Nuclear Corporation organization and senior management which I reported in November 1983, the team had concluded that GPU Nuclear Corporation had the management competence and integrity to safely operate the TMI-1 plant. As further indicated in that report, several recommendations were made which, if adopted, would enhance operation of the TMI-1 plant. While they were not considered essential prior to restart, I recommended they be adopted.

The recommendations of the November 1983 report were adopted by Mr. William G. Kuhns, Chairman of the Board, GPU. Particular attention was therefore given in this return visit to actions which have been taken by the GPU Nuclear management in implementing those recommendations.

As reported herein, the 17 April 1984 review of GPU Nuclear Corporation actions at TMI-1 reveals that the Corporation has made significant and noteworthy progress toward adoption of the recommendations of the earlier report. The Corporation has also strengthened its top management by restructuring its Board of Directors to include Board members from outside the Corporation, with particular technical experience and expertise in the nuclear-power field.

These actions of the GPU Nuclear Corporation management give further evidence of their competence to safely restart and operate the plant.

At the time of the present visit, permission to restart the plant had not yet been made by the Nuclear Regulatory Commission.

This decision has already taken too long. Additional studies or deliberations are not necessary to resolve this matter. Havering by a responsible government agency can cause delay and results in discouragement of those who are technically and financially responsible for the operation of our nuclear facilities. I strongly recommend that GPU Nuclear Corporation be authorized to operate TMI-1 without further delay.

H. G. Rickover
H. G. RICKOVER
19 April 1984

I. Introduction

In the report "An Assessment of the GPU Nuclear Corporation Organization and Senior Management and Its Competence to Operate TMI-1," by Admiral H. G. Rickover, dated 19 November 1984, five recommendations were made which, if adopted, would enhance the operation of the TMI-1 plant.

On 16 and 17 April 1984, the same review team revisited Three Mile Island to assess the action by GPU Nuclear Corporation on each of these recommendations.

A review of each recommendation, together with the action taken by the corporation, is contained in the following sections of the report.

II. Recommendations and Actions

A. Recommendation:

"GPU Nuclear should devise a plan to upgrade the operation and support of the TMI-1 and Oyster creek plants, to achieve a ranking in the top one-sixth of all commercial nuclear plants in the Institute of Nuclear Power Operations (INPO) evaluations. Milestones should be set in each area and progress measured against these milestones."

Action:

GPU Nuclear Corporation has wholeheartedly accepted this recommendation and has set it as its top objective for 1984. The goal of achieving a ranking in the top sixth of nuclear plants evaluated by INPO has been set for TMI-1 for this year, but the goal has been expanded to include a top ranking in the several evaluations made by federal and state regulatory bodies.

The earning of this reputation as a leader among nuclear utilities is expressed in a set of goals which each of the GPU Nuclear divisions has adopted. These goals, in turn, have been expanded by more detailed goals, milestones, and progress reviews applying to each of the two nuclear plants.

Our review noted that the detailed set of individual goals covered all activities important in evaluating a nuclear power plant operation. Each element of the organization had goals. We checked a number of milestones set to achieve these goals against the record of actual accomplishment. The record shows a high degree of commitment on the part of managers and

supervisors toward meeting the milestones and, through those actions, in achieving the goal. The team is well aware that top management can easily set goals and objectives which may not be met unless the lower echelons of the organization are also working earnestly toward these same goals.

It was this spirit of dedication we looked for in talking with those at various levels in the organization. It is our judgment that management has achieved this most important spirit of dedication on the part of its employees.

In the five months since our last inspection of the TMI-1 plant, not one person in the Operations Division has resigned. We found a pride among the employees in the organization which is indicative of the leadership of TMI-1 managers and supervisors.

A recent replacement of one of the main coolant pumps, a very complex operation, was undertaken by the TMI-1 plant organization using its own employees throughout the six-week task. An operation of this magnitude might, under a less committed management and employees, have been assigned to an outside contractor. However, the TMI-1 employees took on this task with pride, thus demonstrating the present capability of the organization.

Examples of this kind are the best evidence of the desire of all employees to achieve the goal of excellence.

Conclusion:

Based on the above, we believe that the goal of receiving a ranking in the top group of nuclear plants can be achieved in the year 1984.

B. Recommendation:

"GPU and GPU Nuclear senior management should become technically informed and personally familiar with conditions at the operating plant. They should visit the plants frequently, at irregular hours, inspect selected portions, and leave a written record of what they observed and how long they remained."

Action:

GPU Nuclear Corporation has taken action to keep top management currently and technically informed on operations and problems. An indication of this is the

reorganization of the Board of Directors to include members from outside the corporation. These will bring technical knowledge and experience in the nuclear power field to the corporation.

The Board of Directors now has a committee of three of these outside members called the Nuclear Safety Compliance Committee. This provides an additional knowledgeable review on the essential requirement for safety in plant operations.

In furtherance of its commitment to a technically well-informed top management, GPU Nuclear has initiated a detailed program, including the following:

1. Training.

- a. The President and the Executive Vice President are presently taking instruction to qualify as Emergency Support Directors for TMI-1 and Oyster Creek. This program, which includes extensive technical training, is scheduled to be completed in 1984.
- b. The Director of the TMI-1 plant participates in at least one week of simulator training per year and in a minimum four hours of formal planned operations training per month.
- c. All senior technical managers who have not already completed Emergency Support Director training for both TMI-1 and Oyster Creek will do so.

2. Methods by which senior management keep aware of plant problems.

- a. The President reviews the Weekly Significant Event Reports from the plant and each support division. He also reviews the Daily Operations Status Reports and the Plant Deficiency Reports.
- b. The Director of the TMI-1 plant and his Chief Assistants attend the 4:00 p.m. change of off-going and on-coming shifts to receive first-hand information on the condition of the plant. He is of course kept advised at all times of unusual plant conditions as they occur.

- c. All Directors conduct frequent staff meetings. They also review the Weekly Significant Events Reports.

3. Plant tours:

- a. The GPU Nuclear President and the Executive Vice President make at least nine unannounced tours per year and submit written reports of their observations to those responsible.
- b. The Director of the TMI-1 plant makes at least two unannounced plant tours each week.
- c. All plant managers (including support divisions) will conduct off-shift tours on a rotating schedule and report findings to the Director.
- d. Technical Functions, Nuclear Assurance, and Radiation and Environmental Controls Directors and their Headquarters-based senior assistants will tour the plants and report their findings.

Conclusion:

While management were doing many of the items indicated above prior to our 19 November 1983 report, these actions have now been formalized and are being checked by the Corporation to assure they are accomplished. The team concluded that GPU Nuclear Corporation is implementing this recommendation.

C. Recommendation:

"Some personnel in the TMI-1 Training Department responsible for training licensed operators are not yet qualified Senior Reactor Operators. We recommend that these personnel complete qualification procedures as soon as possible."

Action:

The training program and formal NRC certification program for Senior Reactor Operators (SRO) has resulted in 18 licensed SRO's in the Operations Division in addition to those in the Training Department. A schedule has been developed for rotation of these licensed operators into the Training Division to ensure that the training is done by completely qualified personnel. At the same time, additional personnel now in the Training Division will be examined for SRO

certification to further increase the flexibility in use of qualified instructors.

D. Recommendation:

"GPU Nuclear should continue to reduce its dependence on the use of consultants. The organization should become self-sufficient to the point where use of such personnel would be necessary only in special circumstances where development of in-house capability could not be justified."

Action:

During the 16 and 17 April visit, GPU Nuclear Corporation advised that by 1 June 1984 all normal maintenance and operations would be accomplished by GPU Nuclear employees.

Consultants would be used in 1984 and later only in circumstances such as the following:

1. Use of Babcock & Wilcox for access to original plant design and safety information.
2. Use of architect/engineers to do detail design of plant modifications. This work will be directed and reviewed by GPU Nuclear personnel.
3. Special operations such as metallurgical examinations, nondestructive testing, and acoustical engineering where special equipment and training are required.

GPU Nuclear management stated that in-house capability had developed to the point that consultants were not required except in special circumstances as listed above.

Conclusion:

The team concluded that satisfactory progress was being made in this area.

E. Recommendation:

"The general announcing system for the TMI plant distracts personnel in the control room. The system should be modified to significantly reduce these broadcasts to the control room. This will prevent distraction of operators from their primary duties. Also, too many people are in the control room. Only those essential to the operation of the plant should be there. Instructions to this effect should be posted and complied with."

Action:

The team inspected the control room at a time when a testing evolution was in progress (TMI-1 plant leak-test of the reactor containment vessel) and found conditions markedly improved over those observed in October and November 1983.

The distraction caused by the general announcing system in the control room no longer exists. The announcing system has been modified so that, in normal use, no announcements are heard in the control room. A special circuit (activated by a red button at a restricted number of stations) is used to make announcements in the control room and instructions have been issued to limit these announcements to those essential for the operation of the plant.

Access to the control room has also been sharply curtailed and is controlled personally by the Shift Supervisor or Shift Foreman. The team noted evidence that this rule was being enforced.

The conduct of the test which was underway at the time of our last visit contrasted sharply with the October 1983 visit which was also during a time when a test was underway. That earlier test had been directed from the control room. The large number of people, the constant alarms and ready access to the control room had demonstrated that future tests should be conducted from spaces outside the control room to the maximum degree possible.

At the time of this visit, testing was not conducted from the control room, no personnel outside the regular operations section were present, and the ambiance was one of professionalism in dress (uniforms) and conduct.

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Before the Commission

In the Matter of)
METROPOLITAN EDISON COMPANY)
(Three Mile Island Nuclear)
Station, Unit No. 1))

Docket No. 50-289 SP
(Restart Management
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