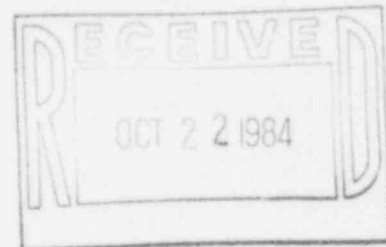


Omaha Public Power District
1623 Harney Omaha, Nebraska 68102
402/536-4000

October 15, 1984
LIC-84-350



Mr. Dorwin R. Hunter, Chief
Reactor Project Branch 2
U.S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

- References: (1) Letter from D. R. Hunter to R. L. Andrews, dated August 8, 1984.
(2) Letter from J. T. Collins to W. E. Miller, dated August 13, 1984.
(3) Docket No. 50-285

Dear Mr. Hunter:

Examination Report - Fort Calhoun Station
Operator Licensing Training Program

In response to References (1) and (2) concerning the Fort Calhoun Station Operator Licensing Training Program, please find attached the District's response describing the corrective measures taken and those planned regarding training program weaknesses. In addition, the attached response reflects those items discussed at a meeting between NRC-Region IV and the District on September 21, 1984. The District is confident that the corrective measures described in the attached response will ensure the District meets its ultimate goal of achieving excellence in training programs for the Fort Calhoun Station.

Sincerely,

A handwritten signature in cursive script that reads "R. L. Andrews".

R. L. Andrews
Division Manager
Nuclear Production

RLA/JJF/rh-C

cc: LeBoeuf, Lamb, Leiby and MacRae
1333 New Hampshire Avenue, N.W.
Washington, D.C. 20036

Mr. E. G. Tourigny, NRC Project Manager

Mr. L. A. Yandell, Senior Resident Inspector

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ATTACHMENT

RESPONSE TO LETTER DATED AUGUST 8, 1984

INTRODUCTION

On June 5-6, 1984, three candidates from the Fort Calhoun Station were administered Reactor Operator examinations by NRC Region IV. All three of the candidates failed this examination as detailed in a letter, D. R. Hunter, NRC to R. L. Andrews, OPPD, dated August 8, 1984. In the August 8, 1984 letter, concern was expressed regarding the adequacy of the Fort Calhoun Station (FCS) operator training programs. A subsequent letter dated August 13, 1984 from J. T. Collins, Regional Administrator NRC - Region IV, to Mr. W. E. Miller, OPPD, reiterated the NRC's concerns on the Fort Calhoun Station operator training programs. These concerns were also addressed at a meeting between the District and NRC management September 21, 1984.

Before discussing the short term efforts that have been implemented in response to the June 1984 exam results, the District offers the following comments regarding our commitment to the FCS operator training process.

The District is currently developing operator training programs that will result in an overall upgrade of the existing Operator Training Programs. This effort is aimed primarily at the development of performance based training for all operator programs and will ultimately lead to INPO accreditation. The development process includes performance of a job needs analysis (i.e. job and task analysis), defining training objectives to bound each need, structuring the training objectives into a logical sequence, defining the training media to be used and implementation of the program to include a feedback mechanism for program evaluation and improvement. Because this is a systematic approach and represents a complete overhaul of the existing Fort Calhoun Station operator training programs, it does not achieve immediate results. To better respond to current concerns, we have structured the current accreditation efforts to achieve some near-term improvements in operator training. One near-term improvement will be the addition of more training facilities in the form of temporary mobile units until long-term facility improvements can be implemented. Long term facility improvements are planned for 1985. Another near-term improvement is the operator lesson plans. In order to expedite the upgrade of the operator programs, the District is devoting a major effort to upgrade the lesson plans while the job and task analysis is being conducted. A third element of the near-term efforts is the development of a formal instructor training program which has been implemented and is more than 50% complete at this time. These three efforts will provide a marked improvement in current operator training. The District will also continue to press forward with the long term accreditation process, making every effort to keep it on schedule. We believe that the development of the performance based training will be the ultimate solution to all operator training needs. The required resources for this effort is a major undertaking for the District and demonstrates our level of commitment to improving operator training. In defining near-term training needs we will continue to avoid diverting needed resources from the accreditation effort.

EVALUATION PROCESS

Based upon the concerns expressed in your letters dated August 8 and August 13, 1984, the District initiated an evaluation to identify and correct the specific causes of the June, 1984 experiences. This evaluation was conducted in three separate tasks. The first task consisted of administering a questionnaire to the three candidates taking the exam to assess their perceptions of the reason for these failures. The second task consisted of administering the same exam to a large sampling of Fort Calhoun Station licensed operators in order to determine if common weaknesses may exist and/or if there were in fact problems with certain exam questions. The third task consisted of a rigorous independent task force assessment of the existing operator training programs with specific emphasis on actual training received by the recent operator candidates.

Since they were informal in their application, the findings from the first two tasks were used primarily as input to the more objective and rigorous task force assessment. Thus, the task force assessment represented a major effort to identify and propose solutions to training deficiencies that lead to the June 1984 examination performance.

The third and final task represented a much more rigorous approach to objectively identify weaknesses that may exist in the training program and what the causes of those weaknesses might be. This task was initiated by forming a four man Task Force and providing them the charter and authority to conduct a thorough investigation of all aspects of operator training programs at the Fort Calhoun Station as they specifically relate to the training provided to the June, 1984 operator examinees. The Task Force consisted of the Director of Nuclear Training and the Supervisor-Training Development of Combustion Engineering, Inc. and the Supervisor-Training Services and Plant Engineer of OPPD. The two Combustion Engineering members provided independence and over two decades of diverse nuclear training experience. The two District team members provided expertise in the management and operation of the Fort Calhoun Station. None of the members of this Task Force have had any previous direct involvement in the conduct or administration of the Fort Calhoun Station operator training program.

The Task Force charter identified two objectives for their assessment. The first objective was to specifically identify the root causes for the recent RO exam failures. The second objective was to recommend measures that could be taken in the near-term to provide a higher degree of assurance that near-term license candidates have been properly trained prior to taking an NRC administered examination. One assumption made at the outset of this evaluation was that the current District efforts to develop and implement a performance based training program represents the ultimate solution to any weaknesses presently existing in the operator training programs.

The initial effort of the Assessment Task Force consisted of interviewing key personnel from the training and operations staff, review of the June 1984 examinations and review of the results from Tasks 1 and 2. Based upon this review, the Task Force then postulated a set of potential concerns for further investigation. It then set about on a detailed data gathering effort to provide objective evidence to either confirm or disprove the postulated deficiencies.

This data gathering effort included tabulation of actual training received by recent licensed candidates, characterization of educational and experience levels of candidates entering the operator training program, tabulation of past exam performance by Fort Calhoun Station licensed operators, review of the training methods used by the training department including lesson plans and student hand-outs, review of existing pre-employment screening used in the selection of operator candidates, and assessment of the process used for defining when a candidate is ready to take an operator examination. Once the data gathering effort was completed, the Task Force as a team evaluated the data to define where weaknesses existed. The Task Force attempted to support any conclusions reached with strong objective evidence. For example, it was postulated that the June 1984 reactor operator candidates may not have received sufficient training on plant systems. In order to determine the validity of this hypothesis the Assessment Task Force tabulated past exam performance (NRC and/or internally administered) comparing performance in the system section of the exams to the other exam sections, tabulation of formal system training received by the licensed candidates and assessment of the process used for completing the students system study guides. Only upon compilation and assessment of this objective data was a final decision made whether or not the original hypothesis was in fact valid.

Based upon the root causes identified by the data gathering and team evaluation process, the Task Force then proposed corrective actions that could be implemented in the near-term to provide assurance that future license candidates are better prepared as well as assuring their capability to safely operate the plant. Although not specifically in their charter, the Task Force also identified a number of longer term actions to be incorporated into the existing program for developing performance based training.

FINDINGS

Task 1

The three operator candidates who took the June 1984 exam were asked to respond to a questionnaire developed and administered by Advanced Technology, Inc. under contract to the District. The operator candidates' responses to the questionnaire identified weaknesses in several areas. In the area of Reactor Theory, all three felt that insufficient instruction had been provided especially at the basic level. Another area identified by them as a common weakness was the need for additional formal lectures on plant systems. A third concern identified by all three concerned the effective use of on-shift time to provide meaningful Control Room familiarization. During task three the issues identified by the three June, 1984 operator candidates were evaluated in more detail.

Task 2

The second task was also performed by Advanced Technology, Inc. A sampling of more than half of the licensed operators presently on shift at the Fort Calhoun Station were tested using the same examination that had been given to the June 1984 licensed candidates. The objective of this testing was to qualitatively identify common weakness among the existing licensed operators on shift. An evaluation of the combined exam results indicated that although there were no major weaknesses, there were some minor weaknesses in the area of

reactor theory, practical application of thermodynamics and understanding of instrumentation and control systems. It was also noted that all of our licensed operators felt the level of difficulty of this exam was higher than in previous exams; thus, this factor may have contributed to operator performance.

Task 3

The initial objective of the Assessment Task Force was to define root causes specifically related to the most recent operator examination license failures. The Task Force determined that the recent high failure rate on operator examinations appears to be due to a combination of factors. The most significant of these factors is related to the educational and experience backgrounds of recent candidates. Two of the RO candidates had no previous steam power plant experience before being employed by the District. By contrast between 1980 and 1984 all RO candidates but one had been previously trained in the Navy Nuclear Power Program. The single exception had previously held three RO licenses and one SRO license on various research reactors. Although the third candidate taking the June 1984 exam had previous Navy Nuclear experience, this training had been completed several years prior to training for the RO examination. Similarly, the recent poor performance of the senior operator candidates was also deemed to be related to background education and experience. A review of senior operator exam performance for upgrade candidates (i.e., reactor operators actually serving on an operating shift), indicated that the District's exam performance has been better than the industry average. However, for the instant senior operator candidates (i.e., degreed engineers on the station staff), exam performance has been well below the industry average. These differences in background education and experience in themselves are significant only in that the Fort Calhoun Station training program had not been structured to account for these differences.

CORRECTIVE ACTIONS

The results of the District's evaluation demonstrated that the major weakness in existing training has been its inability to account for differences in backgrounds of individuals. Thus, the major emphasis of near-term corrective actions is to provide a mechanism for assessing and reacting to individual training needs. The near-term corrective actions have been implemented for the operator candidates scheduled for the November, 1984 NRC examination. These actions include administering detailed NRC type written and oral audit exams to define training needs; structuring classroom training to address weaknesses; and requiring the Station Manager to personally review each individual's performance prior to authorizing them to take the NRC exam. The District believes that these near-term measures will ensure that the three candidates' weaknesses will be directly addressed and their performance more closely monitored.

The District is also initiating several other corrective actions to be implemented for all future candidates until full implementation of performance based training is achieved. Two key elements are to require more rigorous assessment of individual performance to define training needs and to require increased management involvement in the training process. The improved performance assessments will include more structured classroom lectures with mandatory quizzes, structured oral examinations, and additional NRC-type topic and comprehensive audit examinations. These interim measures will be implemented by January 1, 1985.

The District has also defined several longer-term actions and/or areas for further evaluation. These include: review of the Senior Operator Programs to define improvements, additional entry screening criteria for operator candidates, and evaluation of the requalification program for effectiveness. These longer-term actions will be incorporated into the existing program for developing performance based training.

One issue critical to our ability to complete the actions identified above is the staffing of our training programs. Staffing of qualified trainers has been an on-going process at FCS. At the beginning of 1980 one full time trainer was responsible for administering all Fort Calhoun Training Programs, with limited assistance provided by other technical specialists. The majority of this individual's effort centered on the administration and conduct of the operator training programs. Currently seven (7) full time trainers are assigned to the Station Training Department with four (4) additional openings authorized. Of these seven, one is dedicated to licensed operator training and a second to non-licensed operator training. Additionally, two contract trainers are assigned full time to requalification and initial operator training. Additional training personnel are authorized for 1985. In addition, the station organization has been restructured in that a training supervisor's position now reports directly to the Manager - FCS. This organizational realignment was implemented to provide additional authority and emphasis for training programs. We are continuing to aggressively pursue filling the open positions while not sacrificing the qualification of these individuals.

In addition to the station training staff, a corporate Training Services Department was also authorized in March, 1984. The Training Services Department is responsible for the development of the performance based training programs and oversight of program implementation. Currently, three of four authorized positions in this department have been filled.

CONCLUSIONS

The evaluations conducted in response to the August 8 and 13, 1984 letters clearly identified the need for immediate improvements in FCS operator training programs. The District has implemented actions that will provide near-term improvements yet will not adversely impact our long term program to develop performance based training. We are committed to both the near-term corrective actions and the ultimate goal of achieving excellence in training programs for the Fort Calhoun Station.