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ESK-95-059

ComEd

May 1, 1995

Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Attention: Document Control Desk

Subject: Quad Cities Nuclear Power Station, Units 1 and 2
Course of Action Implementation Progress
NRC Docket Nos. 50-254 and 50-265

The purpose of this letter is to provide updated status of progress on the Quad Cities Nuclear Power Station (QCNPS) Course of Action (COA). I initially reported our progress in a letter dated December 23, 1994, and in a supplemental letter dated January 11, 1995 on selected topics. Items in this letter marked (*) are updates on items that were open in the December 23, 1994 letter, and items marked (#) are updates on open items discussed in the January 11, 1995 letter.

The experiences of the last several months have confirmed that we know our most important problems and have a clear vision of the direction and actions required to achieve the necessary performance improvement. Building on the results of the restart actions, we have developed our detailed 1995 action plans (1995 Management Plan) for implementing the COA, and have made important progress toward completion of these actions.

Recognizing that many of the fundamental issues at QCNPS have not yet been fully resolved, we continue to critically assess the results we are achieving, and are adjusting our efforts where warranted. For example, the event that we reported in late December which resulted in a spill of reactor coolant from shutdown Unit 1, highlighted the need for continued improvement in our operating staff that had not yet been adequately accomplished via the restart activities. As a consequence, we re-focused some of our activities on additional upgrade of operations. These activities emphasize understanding the fundamentals of conservative decision making, control of operations and response to operating alarms and indications.

With a clear understanding that many of our problems were the result of Quad Cities management weaknesses, the primary focus over the past several months has been continuing the assembly of a better senior management team which is capable of successfully completing the necessary improvement actions to fulfill the objectives of the COA, and to sustain these improvements at QCNPS. The major part of this team is in place and developing working relationships. Based on their performance, we are confident that we will achieve the long-term fundamental changes that are our goal.

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The following summarize selected items that have been accomplished in the COA. A more complete description is provided in the Course of Action Progress Report dated March 1995, which was submitted to the NRC by our letter ESK-95-030 dated March 3, 1995.

- We continue to make improvements in our senior management team. We have recently appointed a new Maintenance Superintendent, Mechanical Maintenance Master, and a Site Engineering Manager who leads all engineering and technical support activities. These changes complement the new Station Manager, Radiological Protection and Chemistry Superintendent, Work Control Superintendent (Daily) and Executive Assistant to the Site Vice President who were appointed in late 1994. With the exception of the Mechanical Maintenance Master, all of these new management team members came from outside of the ComEd system, bringing with them broader industry perspective and focus to complement the remaining site management team.
- The new management team has instituted new standards of accountability. The practices listed below are some examples, of accountability improvements at QCNPSS.
 - A new station policy has been issued defining guidelines for disciplinary actions that may be taken based on personnel performance. Consistent with this new policy, one licensed operator has been removed from watchstanding duties and actions on two non-licensed operators have resulted in assigning them other duties outside of Operations, all based on performance problems.
 - Actions required under the 1995 Management Plan are now written into each responsible Manager's Performance Plan Review (PPR) goals for 1995. Thus, the major portion of that individual's 1995 performance evaluation will be based upon how well that person fulfills his/her Management Plan responsibilities.
 - At the daily Plan of the Day meeting, the Station Manager requires individual reports from each Maintenance discipline on progress in correcting Control Room corrective NWRs.
 - The Rad-Chem Superintendent has removed authorization to enter the process buildings for several individuals because of radiological practice infractions.
- We have made other changes in the station functional organization that have enhanced line and support organization effectiveness.
 - System Engineering has been combined with Site Engineering under the Site Engineering Manager. This provides the advantage of centralized focus in engineering matters. Since January 1995, we have also increased engineering manning by hiring 27 new engineers.
 - The Site Construction group, previously under Site Engineering has been transferred to Maintenance. This sharpens the focus of Engineering, and places all site physical work in one organization to enhance efficiency. (*)

- Quality Control has been combined with Quality Verification under the Site Quality Verification (SQV) Director to enhance that organization's effectiveness. When a Technical Specification change is approved, the SQV Director will report directly to the Site VP. (*)
- Since January 1995, several steps have been taken to fortify selected training programs to better meet the needs of the station. Two areas, Engineering and Maintenance training were in special need of training enhancements.
 - Training Advisory Committees (TACs) have been formed in all training functional areas. Composition of the TACs is key line managers for that area and cognizant managers from the Training Department. Meetings are held weekly with few exceptions to discuss training needs and schedules, and to foster line management ownership of training programs. The meetings are chaired by line management.
 - In Engineering, all personnel on site prior to March 31, 1995 will complete basic systems training before the end of 1995. Some engineers will not have met the 12 month completion requirement for this training, but this 1995 program will correct that deficiency and plans are in place for all subsequent training of new engineers to be completed in the required time.
 - The Maintenance training program is under evaluation for major revision. Under development is the concept of re-examination of Maintenance personnel on currently held qualifications, and pre-training and post-training examinations to compare levels of knowledge before and after training. Limited trials of these types of examinations are in use. Both of these programs are implemented. No schedule has yet been established for completion of these examinations.
 - Quad Cities has initiated a six-site ComEd training comparison effort covering all of the training functional areas. This effort will enable us to learn from other sites in those areas where our programs can be improved, and where we can contribute to the efforts of others.
 - QCNPS has hired an industry recognized expert consultant in training matters to provide an independent evaluation of the direction of our training improvement efforts. This work will be completed near the end of May 1995.
- In April, 1995, a six week seminar series was completed on the subject of Conservative Decision Making (CDM). Each one and a half day seminar was led by the Vice President for BWR Operations along with the three BWR Site Vice Presidents and was attended by senior management and licensed personnel from Quad Cities, Dresden and LaSalle stations. These CDM seminars were designed to enforce a thought process which ensures that a conservative approach to safety is maintained in operational decisions. (#)

- A series of process changes have been made to improve work management to ensure that work items are completed in order of priority, and that work is accomplished more effectively and efficiently. Effective work management is essential to resolving long standing materiel condition problems, keeping pace with emergent materiel problems, and removing the operational burden of operator workarounds. We have not yet achieved a satisfactory level of performance in the effective, efficient accomplishment of work. However, we have made substantive changes in our processes toward those ends. These changes have included:
 - Implementation of new, streamlined work control process which resolves some important problems in the process which had been an impediment to conduct of work. Examples of improvements include: elimination of unnecessary Quality Control reviews of packages in preparation, reduced unnecessary redundant reviews on package closeout and more efficient post work testing by allowing "bundling" of post work test requirements. (*)
 - Redesign and implementation of a revised work package process to improve the ease of use and work completion quality and efficiency.
 - Implementing the ComEd Electronic Work Control System (EWCS) to facilitate work package preparation including maintaining a maintenance work history (in process). (*)
 - Implementation of a single integrated schedule site schedule to replace the existing fragmented and often conflicting schedule process.
 - Establishment of a Fix It Now (FIN) team to provide fast response to selected, emergent plant equipment problems.
 - Establishment of a twelve-week "system window" schedule, implemented now on a selective basis in Unit 1, with full implementation for both units at the end of the current outage. (*)
- Substantive materiel condition related improvements have been completed. However, one of the most difficult problems at Quad Cities to get completely under control, is the backlog of open corrective NWRs. While general trends for total open NWRs, which includes preventive maintenance and surveillances, show a decrease, the numbers of corrective NWRs in the backlog has continued to grow. I believe we understand the causes, and in time will achieve significantly reduced backlogs.

The history of materiel problems, brought about by not promptly addressing equipment needs in the past, dictates our present course of activity. Additional Control Rod Drive (CRD) replacements, CRD pump overhauls, cooling water intake structure equipment and pump repairs and Emergency Diesel Generator overhauls are some examples of labor intensive work, accomplished since late 1994 or in progress. There are many other examples. We are determined to work on the right things, important to safety and reliability.

We are resisting the temptation to manage indicators. We are doing the work that is most important, but this is causing in large part, our backlog increase. Even considering these issues, there are other causes as well.

Increased sensitivity to materiel condition has lowered the threshold and resulted in more deficiencies requiring work to be reported. We need to further improve the efficiency of our work control processes which will assist in improving our overall productivity. The size of our maintenance work force may be inadequate to keep up with routine work and simultaneously reduce backlogs, so we are also evaluating hiring additional permanent maintenance personnel.

Some of the materiel condition improvements we have made or are in progress include:

- Completion of walkdowns and reviews by System Engineering, of all systems important to safe and reliable operation of QCNPS. This is a continuation of the program done during the restart period of late 1994. We are in the process of implementing quarterly walkdown schedules.
- Reduction in the number of open design changes from just under 800 in early 1995 to approximately 550 by June 15, 1995. This is being accomplished primarily by closing paperwork for completed work, and by cancelling those with little or marginal value. That was the intent of the effort. This effort is ongoing and will result in an open design change data base that will reflect those modifications of high value with scheduled installation. (*)
- Reduction program for the number of operator workarounds. The goal is a reduction to zero for those greater than 90 days old by the end of 1995. The number of workarounds has remained essentially steady in recent months. Workarounds are being corrected at the rate of approximately 12 per month, but new ones are being identified at about the same rate. It is recognized that extra resources will need to be dedicated to reduce the total numbers. (#)
- Correction of a range of vibration problems in the Residual Heat Removal (RHR) and Core Spray systems including RHR flow control valves, 1B RHR pump motor, and the 1A Core Spray and motor, all on Unit 1. Similar improvement efforts are currently in progress on Unit 2.
- A long standing vibration problem with Unit 2 HPCI is currently being addressed with a major effort which includes cutting and flanging piping as well as machining pump bases to correct alignment problems.
- Implementation of a range of improvements on the Emergency Diesel Generators (EDG) including replacement of the sealing elements, installation of additional component supports to reduce operational stresses, and replacement of selected cooling water pumps and motors, and overhaul of one-half EDG.
- A downward trend in Control Room corrective NWRs began approximately March 1, 1995, and is being carefully monitored with the goal of continued reduction in the numbers of these NWRs. Progress is reported to the Station Manager daily at the POD meeting.

- RHR Service Water pump improvements including pump impeller modifications, pipe hanger repairs, refurbishing pump seals and seal cooling and motor refurbishment. Some work, although not the same work for each pump, has been done on most pumps for both units.
- Improvements in Unit 1 HPCI drain pot level alarms and exhaust steam spargers. These same improvements are in progress on Unit 2 HPCI.
- Progress on the Maintenance Rule (MR) has included: appointment of the Expert Panel, two weeks completed of the four week effort of MR Scope and Risk Significance Determination, and the start of establishing System Performance Monitoring Criteria. (*)
- All Technical Information Letters/Service Information Letters (TIL/SIL) have been reviewed. Other vendor manual reviews are proceeding satisfactorily. (*)
- Substantive improvements have been achieved in radiation protection including:
 - Decontamination of over 69,000 square feet of the plant has been accomplished bringing the total contaminated area to less than 10% by the end of 1994, well on the way to our goal of 5% by the end of 1995. During the current outage, decontamination efforts have kept contaminated floor space about 3-4% below our outage goal of 16.5% maximum. (*)
 - Chemical decontamination of reactor recirculation, reactor water cleanup, and RHR system, piping during the Unit 1 refueling outage, substantially reducing dose rates in the vicinity of these systems. A similar scope of chemical decontamination is being accomplished in Unit 2 during the current refueling outage; in addition the major source term components in the reactor water cleanup system (i.e., piping and heat exchangers) are being replaced. (*)
 - Reduction in personnel dose through diligent ALARA planning and unprecedented use of shielding in the drywell and for RWCU work. We have accumulated less than 40% of the planned outage dose goal with approximately 50% at the outage duration elapsed. Overall dose for the year is approximately 325 person-rem as of April 24 with an end of April dose goal of 497 person-rem. (*)
 - Detailed ALARA analysis was performed to define our 1995 station dose goal of 950 person-rem. While this goal is not exemplary, it represents a nearly 17% reduction below 1994 accumulated dose, and we are currently on track to finish the year well below the 950 person-rem estimate. (*)
 - Performed de-sludging of the Unit 2 torus with substantive reduction in dose rates (i.e. Decontamination factors of greater than 10 on contact with bottom of the torus; factor of 6 general area on inner wall locations; factor of 1.5 on outer wall locations). (*)

- Operations upgrade which has included:

- Conservative Decision Making seminars (discussed earlier). (#)
- Major improvements in operator panel attentiveness. A requirement has been promulgated for operator attentiveness that allows operators to look away from their panels only momentarily, and which requires a complete panel walkdown at least every 15 minutes. This requirement is being enforced in the Control Room and in the Simulator.
- Implementation of the Conduct of Operations Manual. This manual includes the INPO good practices for all of the functional areas of Operations, and each chapter is followed by the QCNPS implementing procedure for that area. One of the areas is the Shift Turnover Guidelines which details the requirement for thorough turnovers and for optimum communication of plant status between crews. The requirements for formal communications in dealing with plant status and issues is also included and is routinely practiced and enforced. (#)
- Improvement in operator awareness of work under their cognizance, especially Out of Services (OOS). All OOSs must be processed through the affected Unit Supervisor and the Unit Admin NSO. The OOS is then briefed by the Admin NSO to the persons performing the OOS work in the field. The Unit Supervisor controls the process and timing of all work on the unit. (#)

The Operations organization has been changed to have the Shift Supervisor, who serves as the in-plant operations manager overseeing work activities, report directly to the Unit Supervisor to increase the overall management control of work out in the field.

- Probabilistic Risk Assessment (PRA) training was conducted for licensed operators by the Operations Manager and corporate PRA experts. This training covered different events' contributions to core damage frequency and which equipment is vital for recovery from those events. Safety reviews for the daily site schedule contain written discussions of the PRA significance of scheduled activities. (#)
- A computer tool called Operational Safety Predictor (OSPRE) is now in use which aids operators in scheduling equipment maintenance with respect to safety significance. Licensed operators have been trained in the use of this computer tool. (#)

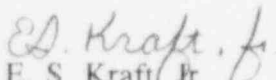
We have observed short-term improvements in several specifically targeted areas, particularly during the activities performed for restart in late 1994. However, recognizing that many of the fundamental issues at QCNPS have not yet been fully resolved, we continue to critically assess the results we are achieving. We will adjust focus and emphasis to learn from our mistakes and those of others whenever miss-steps occur.

May 1, 1995

The COA continues as our blueprint for the overall activities to improve long term performance at QCNPS, and will be implemented via the existing detailed action plans in the 1995 Management Plan, and the 1996 Management Plan which will be developed later this year. It is essential that we remain flexible enough to recognize when our plans and actions need to be revised when found not to be fully effective, and as new problems are identified.

Clearly the most important key to near and long term success is the effectiveness of our management team. I believe we have brought together the management team that can be successful in achieving the lasting fundamental changes that are our goal. To a limited extent, only because of the short time we have been together, we have already demonstrated management team effectiveness. I am confident our effectiveness will increase. I am not complacent and will monitor our progress closely. If more changes are needed in personnel, policies or anything else, they will be made.

Please call me should you have any questions or require additional information.


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Site Vice President

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