



KANSAS GAS AND ELECTRIC COMPANY

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Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attn: Docketing and Service Branch

KMLNRC 81-075

Subj: Analysis, Conclusions and Recommendations Concerning
Operator Licensing (Generic Letter No. 81-02)

Dear Sir:

The purpose of this letter is to forward comments that Kansas Gas and Electric Company has concerning NUREG/CR-1750, "Analysis, Conclusions and Recommendations Concerning Operator Licensing". This report is of significant interest to us because of the significant changes the Commission is considering making in operator qualification requirements and this report will presumably serve as one basis for these decisions. This document appears overall to be the best evaluation to date by the Commission of operator qualification and training requirements. We were encouraged that contractors actually reviewed that practice of the commercial nuclear industry rather than assuming that the practices of another industry, such as the Nuclear Navy program (NUREG/CR-1280) or airlines are by definition superior and automatically adaptable to our industry. A commercial nuclear power plant is much more complex than either a submarine reactor or airplane, and its mission is such that a shutdown, while imposing severe economic penalties, is not as severe in consequence.

The following comments are made as a constructive effort to help improve this document so that the Commission will have the best possible reference base upon which to make its decisions. The length of the document and the amount of staff time we can devote to reviewing the flood of post-TMI documents makes commenting on each of the over sixty recommendations impossible.

1. Section 2.4, Conclusion Six and Recommendation Six

This section states that a site-specific simulator should be used. We believe this is an overreaction. The simulator used in training certainly should be similar and the October 23, 1980 draft of ANS 3.5 provides criteria for acceptable characteristics for simulator training. We chose to buy a site-

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specific simulator for Wolf Creek in order to reduce employee travel, have more flexibility in training schedules, and reduce the orientation time required for operators to adapt to a somewhat different simulator in order to obtain effective training. A good operator can look beyond the location of the meter and learn from the idea that the meter exists and its value is properly understood.

We feel that this conclusion has been reached without successfully documenting the base. For example, Table 2.7, items 11 through 14 make the statement, really an assumption, that the listed motor skills can only be developed on a site-specific simulator. That is a position that would appear to have very little basis other than a judgment call looking at the developed criteria. The argument can equally be made that these skills are inherent in normal training and that such items as "take manual control" are just the extension of normal operating practice placed in an accident setting.

This revised logic, if properly used, will eliminate the five items in question and, if so, eliminate a key point in the question of site-specific versus generic simulation. We, therefore, recommend that your Recommendation Six "long range" on page 2-97 be deleted.

2. Section 2.4, Conclusion Seven and Recommendation Seven

Conclusion Seven on page 2-91 is an idealistic approach that does not include the reality of scheduling personnel. Leaving a training course with an open end finish time is just not practical. The only realistic answer to this concern is "to define and schedule in a more efficient manner".

3. Section 2.4, Recommendation One

The Recommendation One, if implemented, would produce an infinite number of training programs based on the "as seen" need of the people who made the plant specific job task analysis. This could better be handled by an industry-wide analysis by INPO and a minimal "deviation from norm" examination by each utility. The example given of "time standard for completion" certainly seems to be a likely generic norm based on the design basis of each NSSS design and the reasonable similarity of Control Room design from a macroscopic view. This in essence then is concurrence to paragraph 1B on page 2-94 with the emphasis slightly changed. Our comment on Appendix A contains further thought on developing useful task analysis for plant positions.

4. Section 2.4, Recommendation Twelve

This recommendation requires that the NRC "adopt a strong management approach to license training" and "become more involved in the conduct and content of training". We do not concur and believe this is best left to the utilities with assistance from INPO. The USNRC does not have the in-plant experience to dictate training programs to utilities. The Commission has the examination role to verify the qualification of each candidate and this should be a sufficient audit. This report in a number of places refers to the shortage of people available to conduct the current responsibilities of the Operator Licensing Branch. Assuming these additional responsibilities is only going to increase the manpower shortage.

5. Section 2.5.3, Conclusion Three and Recommendation One

We concur with the conclusion of the report that the highest level of corporate management cannot be responsible for certifying the technical competence of candidates for licensed operator exams. While they may sign the application letter, they must rely on the ability of training and operations supervisory personnel to make these judgments. It is difficult to believe that a Vice President - Nuclear is going to discern in a short interview with an operator licensing candidate more information about his character and sense of duty and responsibility than the plant management will by observing the candidate for a year or more prior to licensing. This interview appears to be mostly ceremonial and not really needed.

6. Section 2.5.4, Conclusion One and Recommendation One

This report significantly differs with the proposed change to 10CFR55 discussed by the Commissioners in their open meeting of March 12, 1981. This report states that a college degree is not a necessary requirement for the shift supervisor position. However, SECY 81-84 of February 2, 1981 would require a Bachelor of Science degree for all Senior Reactor Operators. The discussion section in SECY 81-84 nowhere acknowledges the existence of this report, although the Commission received the manuscript in November, 1980. It is not clear to us how the Commission can justify an obvious sizeable expenditure of public funds to prepare NUREG/CR-1750 and not address its conclusions in the rulemaking process.

In our letter of January 19, 1981 on proposed Revision 2 to Regulatory Guide 1.8, we strongly concurred with the conclusions

of this report concerning college level training for operators. The Commission has been urging a task analysis approach to determine job qualifications, but we are not aware that the Commission has prepared task analyses to justify the college degree requirement for a Senior Reactor Operator.

7. Section 2.5.4.5, Conclusion Two

This study recommends a mandatory one year period of holding a reactor operator's license prior to obtaining a senior reactor operator's license. NUREG-0737 noted the problems this caused in increasing the qualifications of plant engineering personnel and deleted this one year waiting period for candidates with a B.S. degree who meet other SRO requirements. We think these concerns are valid and recommend that the Commission retain the requirements of NUREG-0737 concerning this subject.

8. Section 2.6.4.2, Recommendation Three

The intent of this recommendation is perhaps appropriate; however, the development of "point" values to skill and knowledge areas presupposes a level of qualification on the examiner that we do not believe is attainable.

A point which seems to be overlooked is the basic progression of the training program. The end point is not the completion of the RO or SRO examination with a grade of 80% or better. This initial examination certifies that the person is qualified to operate the plant in a competent manner. The training and enrichment of the qualifications of the operator continue by on-the-job practical experiences plus recertification training which should improve the qualifications of the operator. Probably the most significant examination is the requalification exam, because this tests all the operators, not the newly licensed operators. In order for this requalification exam to test the relevant, specific characteristics of the plant, it will have to be developed and administered by personnel with this plant-specific information and experience. We do not believe the USNRC currently has the manpower in its Operator Licensing Board to develop and administer a rigorous site-specific requalification examination. We believe this examination is better left within the utility structure.

9. Section 2.7.1, Recommendation on Simulator Operating Examination

The concept of a team of operators passing a simulator exam every year needs much more in-depth discussion in terms of its

implementation. The concept of people being able to communicate and function as a team is important, and personnel friction on a shift is sometimes a reason for management to reassign people to other shifts. The question of qualifying teams immediately raises the question of whether an operator can be assigned to another shift as a result of promotion, replacement for another operator, etc., without having the NRC administer another "team" exam. Lack of teamwork problems are probably much more evident to plant management during day-to-day operations than they are during a high visibility, showcase two or three hour NRC-administered simulator exam. The concept of teamwork is important, but it cannot be evaluated in a two or three hour exam.

10. Section 2.7.1, Recommendation for Upgrade Training Program

The requirements for a three to six month full time "upgrade" training program every five years in plant fundamentals and plant systems will have a significant effect on shift manning and training staff loads. It would seem if an operator is going to pass oral, written, and simulator exams every year, he is going to have to stay quite knowledgeable of plant fundamentals and systems. The contents of this "upgrade" program are not discussed. It is suggested the contractor review requalification program requirements and identify technical topics that are not included in order to justify the need for this sizeable additional "upgrade" training program. In general, we believe the theoretical training program as shown in Table 2.25 and Figure 2.12 would be an effective way to direct training if sufficient staffing were available. The effect of this would be to mandate a shift of personnel with "no concurrent" duties for several months and the rest of the plant operation on a four shift rotation. That will not work with the work load of a normal nuclear plant. It is, however, possible to do this on a modified six shift rotation.

11. Section 2.7.1, Recommendation that USNRC Conduct Simulator Operating Examination

The recommendation that utility operators annually be confronted with a government examiner is going to have a serious effect on the motivation and attitudes of operators. This annual approval of whether an operator can continue on his job will result in even greater strain and increased turnover. We think it is unreasonable and counterproductive to subject operators to this additional job pressure, when existing programs and additional requirements in other areas are adequate.

12. Section 2.8.1, Analysis for Conduct of College Level Training

This report vastly underestimates the commitment of operator time required to conduct college level training. Figure 2-14 indicates that six credit hours of college level training can be achieved in a three-week period. As a general rule, college level training assumes two hours of outside work for each contact hour. If the operator has 30 contact hours of class a week, this means he must put in an additional 60 hours of non-classroom work for a total of a 90-hour work week. The Board of Regents of the State of Kansas generally will only accredit programs that average one credit hour (15 contact hours) per week, and a maximum full time student load is 20 contact hours a week. It is doubtful the program outlined by this report could be accredited anywhere in the United States. A further time complication is that some of the specific courses that the NRC is requiring also include laboratories. Traditionally, two or three laboratory contact hours are required in place of one classroom contact hour in order to receive the same credit. If one of the classes had 14 laboratory experiments associated with it, this could easily result in adding another eight hours to the proposed 90 hour work week. This report did not study the effects of attempting to conduct 60 credit hours of college level training or a full degree program, which is advocated by other documents. In summary, this discussion of time required for college level training programs will not give the Commission a realistic estimate of the cost and time effect of implementing its college level training requirements.

13. Section 2.8.2, Recommendation One

This report advocates that utilities obtain plant specific simulators rather than use vendor simulators. Yet, the personnel at the utility that uses vendor simulators are not required to undergo the scrutiny of an NRC-administered simulator exam. It is not clear whether the contract renewal, revenue pressures that a vendor is subject to are less than internal pressures within a utility to improperly assess the qualifications of an operator. We do not believe a qualified vendor is any more independent from pressures than a qualified utility training department when it comes to passing judgment on performance standards. The distinction between vendor-owned and utility-owned simulators is unwarranted and may actually penalize utilities that have taken the lead in providing these much advocated training facilities.

14. Section 2.9, Operator Compensation, Status and Motivation

Figure 2.27 in the section on Operator Compensation, Status and Motivation lists a number of perceived negative aspects of being an operator. The most predominant is entitled "excessive requirements or overregulation" with "poor compensation", "poor working conditions (shift work)", and "limited growth and advancement potential" listed even less frequently. We believe that highly trained operators will have to be looked at differently and their skills used in other areas than plant operations. This will be a challenge, as discussed in Section 2.9.2.7, "Organizational Climate" that Kansas Gas and Electric Company and other utilities will have to meet. The compensation issue will be corrected by marketplace forces of supply and demand which have already resulted in much higher license bonuses and other compensation changes. A survey of any group of workers will always discover a number of individuals dissatisfied with their pay. This Section 2.9 on job conditions does not discuss or address how to resolve the most frequently expressed negative aspect of the job, "excessive requirements or overregulation". This contractor has identified the post-TMI NRC regulatory environment as the most significant cause of operator dissatisfaction and turnover with the attendant serious safety implications of having less experienced personnel in the control room. This report cannot be considered complete until this aspect is fully analyzed and recommendations for improvements in regulatory requirements to correct this serious problem are put forward.

15. Section 3.0, Non-Licensed Operating, Maintenance and Technical Support Personnel

We have chosen not to take time to comment on this section since it is outside the scope of the report concerning Operator Licensing.

16. Section 4.3.3, Licensed SRO Examiners

It is advocated that utilities supply to the NRC elite Senior Reactor Operator personnel to serve as "Check Operator" examiners. While we sympathize with the problems the Operator Licensing Branch has in recruiting examiners, it must be remembered that many nuclear plants are undermanned and overtime hours are quite high. This is merely "robbing Peter to pay Paul" and does nothing to solve the shortage of qualified personnel in the industry. We would have serious concerns about having our Senior Reactor Operators participate in a program in which they assumed the responsibility for passing on the qualifications of other utilities operators.

17. Section 5.2.2, Suggested Changes to Regulatory Guide 1.33

It is advocated that the Quality Assurance audit program monitor the effectiveness of training programs as well as compliance with requirements. No guidance is provided for the criteria that the QA auditor is to use to measure this effectiveness. Measurement of the effectiveness of an instructor or training program is quite subjective, and more guidance should be included. This would probably be achieved much more easily using experienced training supervision from the utility, an auditor, or INPO.

18. Appendix A, RC/SRO Job Task Analysis

The effort of task analysis should be focused on developing concise statements, keeping in mind they will primarily be used by direct line plant supervisory personnel and training personnel who are quite familiar with the power plant environment. It is doubtful that listing all of the various types of procedures and then making standard entries such as "establish priorities" or "operate controls" as is done in Appendix A will contribute very significantly to expanding the frontiers of knowledge concerning the tasks of power plant personnel. We have seen other proposed task analyses that painstakingly individually list many systems and make an entry after each system or "manipulate components" or "observe indications". It is felt that an intelligent task analysis approach can be developed that will highlight significant deficiencies in a utility's perception of position requirements without establishing pages and pages of reiterating checklists in which significant points will get lost in a sea of facts that are readily obvious.

Personnel and organizations assigned to conduct this task analysis work should have significant familiarity and experience in commercial nuclear power plant operations in order that they may discern the difference between the significant and insignificant. We suspect some of the job task analysis outlines performed to date are being prepared by Department of Defense contractors with little experience in the commercial nuclear industry. Much emphasis has been given to this effort and it should not be conducted by organizations undergoing a learning curve in the commercial nuclear industry.

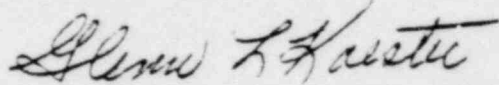
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We at Kansas Gas and Electric Company are grateful to have the opportunity to present our comments on NUREG/CR-1750. We hope these comments will be useful in the Commission's evaluation of this report with respect to its rulemaking determinations for licensed operator qualifications.

Yours very truly,



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cc: EPWilkinson, INPO

PFCollins, USNRC