



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
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ATLANTA, GEORGIA 30303

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SSINS 0182

MEMORANDUM FOR: James P. O'Reilly, Director, Office of Inspection and Enforcement, Region II

THRU: *W. A. Puhlman* R. C. Lewis, Acting Chief, Reactor Operations and Nuclear Support Branch, Region II

FROM: W. A. Puhlman, Acting Chief, Nuclear Support Section No. 2, RONS BRANCH

SUBJECT: REGIONAL OFFICE NOTICE NO. 2212, RECOMMENDATIONS FOR CHANGES IN IE PROGRAMS

In the subject Regional Office Notice, you solicited comments on additions or deletions to IE programs considered necessary following TMI. Although I previously prepared virtually these same recommendations (9/77) when in Region I and even though they were subsequently forwarded to Mr. Skovholt by Mr. Grier, I feel that it is again necessary to inform my management of my recommendations in this area. Mr. P. Taylor of NSS#2 is currently collecting data to submit proposed changes to licensee requalification programs as a result of the intensified training inspections which you directed for all RII licensees. Mr. Taylor will also be preparing a summary of these inspections which will contain additional conclusions and recommendations in this area of training. NSS#2 is currently commenting on ANSI/ANS 3.1-1978 and the proposed Regulatory Guide 1.8 revision which is to endorse the revised standard (formerly designated ANSI N18.1). The recommendations in this memorandum are in addition to these other two efforts.

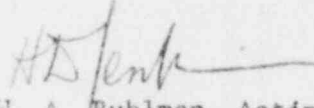
Based upon evidence I have obtained from direct inspections, and my review of licensee event reports (LER's), allegations, and internal Government audits and studies, the performance of individuals at nuclear power reactor facilities is deteriorating as the complexity and number of facilities increase. This decrease in performance is attributed to both the increasing complexity of the plant systems and the diminished pool of trained and experienced personnel. Personnel who were initially involved in development of commercial reactors have been promoted, retired, or otherwise displaced from the day-to-day operation of the facilities and have been replaced by less experienced and less knowledgeable personnel.

Personnel initially performing operator, maintenance, control, core physics, and health physics functions were degreed personnel with vast engineering and/or scientific backgrounds. As these personnel were replaced with younger,

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less experienced operators and craft personnel, the competence level of these positions declined. The NRC(AEC) first recognized this decline in the area of plant operators. The Commission moved to stabilize the competence of plant operators at an acceptable level with the introduction of reactor operator licensing requirements in 1958 (10 CFR 55). These requirements were further subdivided into Senior Operator and Operator requirements with amendments to 10 CFR 55 in 1963. The need to assure that suitable proficiency was maintained, in addition to being initially achieved, was recognized and covered with the issuance, in 1973, of requalification requirements. While the record of operator errors is not perfect, far fewer errors are attributable to licensed operators (proportionate to the number of critical activities performed) than to non-licensed operators.

As a result of the benefits realized through implementation of a licensing program for reactor and senior reactor operators, and based on the similarities in the initial problems, it would seem prudent to pursue similar action for personnel engaged in the areas of radiation protection, maintenance, and instrument and controls based on public and NRC concerns as a result of TMI. The rationale and implementation concepts are defined in Appendices A and B to this memorandum.

  
for W. A. Ruhlman, Acting Section Chief  
Nuclear Support Section No. 2

## APPENDIX A

### LICENSING/CERTIFICATION OF HEALTH PHYSICS PERSONNEL

#### RATIONALE

The concept of licensing/certifying the individuals involved with protection of health and safety against radiation is embraced in the definition (55.4 (f)) of controls in Part 55. This proposal is specifically aimed at only those individuals making decisions or taking actions which could adversely affect the radiation exposure of either plant personnel or members of the general public.

#### PROPOSALS

It is proposed that persons with responsibilities in the following areas be required to obtain an NRC license or certification. This license/certification would be issued following the successful completion of both an oral and a written test.

- authorize entry into radiation, high radiation, contaminated, or airborne activity areas;
- make decisions relative to evacuation, measurements, samples, and other management decisions associated with site radiation emergencies;
- supervise or approve the results of surveys, air samples, contamination swipes;
- evaluate and decide on increasing allowable radiation exposures for individuals beyond established administrative guidelines; and
- have the authority to approve/disapprove radiation control and measurement procedures and/or radiochemistry analysis/sampling procedures.

## APPENDIX B

### ALTERNATIVE NO. 1

#### LICENSING OF PLANT OPERATORS/PLANT CRAFT PERSONNEL

##### RATIONALE

10 CFR 55.4(f) defines controls as those apparatus and mechanisms the manipulation of which directly affects the power level or reactivity of the reactor. This definition does not preclude consideration of the direct action of one individual in conjunction with the direct action of a second individual. A licensed operator may affect the power level/reactivity of the reactor through or following the direct action of a second (unlicensed) individual whose performance is beyond the control of the licensed person. As examples, an RO/SRO manipulates the controls of the facility after:

- an I&C technician has improperly calibrated an instrument used to monitor the process and a safety limit is exceeded;
- a mechanic has repaired a pump, a blind flange is left in the flow path, the flow fails to be established when the system is required to operate;
- an operator incorrectly mixes a batch of boric acid by including a bag of NaCl crystals and the resulting mixture (tested only for boric concentration) is aligned to the makeup system and subsequently injected into the primary system.

If the individuals responsible for the above actions were licensed by NRC, enforcement sanctions could be taken directly against the persons involved.

##### PROPOSAL

Following the basic approach of 10 CFR 55, NRC would license plant operators/ plant craft personnel performing the following types of functions on safety-related structures, systems, components, and/or consumables.

APPENDIX B

ALTERNATIVE NO. 2

CERTIFICATION OF PLANT OPERATORS/PLANT CRAFT PERSONNEL

RATIONALE

Regulatory Guide 1.58 and ANSI N45.2.6 require the certification of inspection/examination/testing personnel. These documents currently allow considerable latitude in establishing acceptable levels of training/qualification necessary for certification. If direct NRC licensing in accordance with Appendix B Alternative No. 1 is not considered desirable at this time, an interim method of certification, similar to FAA certification of aircraft mechanics, could be used.

PROPOSAL

Modify Regulatory Guide 1.58 to require that minimum certification programs would be specified by NRC. Following OLB review and acceptance of the certification program and OIE's review of the licensee's completion of the specified certification program, OIE would recommend that NRR:OLB issue letters of certification to those inspection/examination/testing personnel successfully having completed the licensee's courses.

NRC certified personnel would perform or direct all inspection (examination, observation, or measurement to determine the conformance of materials, supplies, components, parts, appurtenances, systems, processes, or structures to pre-determined quality requirements), examination (a critical investigation of items by nondestructive methods), and testing (determination or verification of the capability of an item to meet specified requirements by subjecting the item to a set of physical, chemical, environmental, or operating conditions) operations.

Since only NRC certified personnel could perform these functions, and since this NRC certification could be suspended and/or revoked in cases where significant errors in performance of assigned duties were detected, this certification would provide an enforcement tool as well as increasing the competence of personnel performing these functions.

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- Valve lineups;
- Operability checks/inspections;
- Calibrations/setpoint adjustments;
- Pessin/chemical additions, preparations, filling of systems;
- Post maintenance testing/inspection/examinations; and
- Surveillance tests.

An oral and written examination, broken down into 3 categories (operator/I&C/mechanic) would be administered to journeyman level plant operators/control technicians/mechanics. Personnel working with/under the supervision of these journeymen would not require licenses.