TEMPORARY INSTRUCTION 2515/123

IMPLEMENTATION OF THE REVISED 10 CFR PART 20

SALP FUNCTIONAL AREA: PLANT SUPPORT (SOPLTSUP)

APPLICABILITY: All operating power reactors.

2515/123-01 OBJECTIVES

01.01 To evaluate reactor licensee's radiological controls for implementing the revised 10 CFR Part 20 to ensure that reactor licensees have established programmatic controls that are effective with respect to high radiation areas (HRAs), very high radiation areas (VHRAs), dose to the embryo/fetus, maintaining total effective dose equivalent (TEDE) as low as is reasonably achievable (ALARA) while working in airborne radioactivity areas, and planned special exposures.

2515/123-02 BACKGROUND

The revised 10 CFR 20 became mandatory for all licensees on January 1, 1994. In addition, some licensees voluntarily implemented the revised regulation early. The revised regulation differs in many ways from the "old" 10 CFR 20. This Temporary Instruction (TI) covers changes in 10 CFR 20 philosophy and requirements, emphasizes the importance of controlling access to high and very high radiation areas (HRAs and VHRAs), and recognizes the importance that some licensees have placed on the use of respiratory protection equipment.

The new requirement for justifying the use of respiratory protection devices as part of a program to ensure that each individual's TEDE is maintained ALARA represents a major change in the radiation protection philosophy as embodied in the old 10 CFR 20.

Overexposures have occurred in high radiation areas (many of which would be classified as VHRAs under the revised 10 CFR 20) and the potential exists for lethal exposures in some of these areas. (See Appendix B of Regulatory Guide 8.38, "Control of Access to High and Very High Radiation Areas in Nuclear Power Plants" for references detailing such events).

Although many licensees have voluntarily provided for limiting the dose to the embryo/fetus when this is the desire of the pregnant woman, 10 CFR 20 now requires this. 160018

Also, many reactor licensees have utilized some method for granting "dose extensions" i.e., allowing individuals to exceed the licensee's own administrative dose limit (usually set well below the 10 CFR 20 limit). The revised 10

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and the engendering of effective communications between work groups and supervisory and management levels concerning HRAs and VHRAs.

03.02 Declared Pregnant Women (DPW) and Embryo/Fetus Doses

a. Determine whether the licensee has established adequate policies and procedures for implementing the requirements of 10 CFR 20.1208, "Dose to an Embryo/Fetus."

b. Determine whether the licensee is providing effective training concerning the requirements of 10 CFR 20.1208.

c. Determine whether DPW dose assessments are adequate and whether the doses are within the applicable regulatory limit.

03.03 TEDE/ALARA and Respiratory Protection

a. Determine whether the licensee has established an adequate training program, policy, and procedures to initiate the implementation of 10 CFR 20.1702, "Use of other controls", focusing on the requirement to maintain worker total effective dose equivalent (TEDE) ALARA while performing work in airborne radioactive material areas.

b. Determine whether the licensee has properly trained its workers to maintain their TEDEs ALARA while working in airborne radioactive material areas.

c. Determine the degree of success the licensee has achieved in maintaining worker TEDEs ALARA, while performing work in airborne radioactive material areas.

03.04 Planned Special Exposures (PSEs)

a. Determine if the licensee has a policy that it will not use PSEs.

b. If the licensee has not excluded the possible future use of PSEs, determine whether the licensee has established adequate procedures to be used in the event that the licensee authorizes a PSE.

c. Determine whether any PSEs that have been authorized by the licensee are consistent with regulatory requirements and licensee procedures.

2515/123-04 GUIDANCE

04.01 High and Very High Radiation Areas

General Guidance

The central focus of this TI is to ensure that licensee's programmatic controls implement the requirements of the revised 10 CFR 20, including the ALARA principle, and prevent overexposures. Workers must be protected from the hazards presented by HRAs and VHRAs, and changes in plant operations resulting in significant changes in plant radiological conditions which may create HRAs or VHRAs. See Regulatory Guide 8.38 for a discussion of HRA and VHRA access controls. Subpart G of the statement of considerations for the revised 10 CFR 20, "Control of Exposure from External Sources in Restricted Areas" also contains a discussion of HRA and VHRA access controls. In addition, in the first seven

7. Determine (a) whether RPT job coverage responsibilities for work to be performed in HRAs and VHRAs are clearly defined and documented (e.g., in written procedures and RWPs) and (b) whether RPTs are knowledgeable of these things.

8. Determine if RPTs understand their stop-work responsibility with respect to departures from the radiological conditions or the work scope described in pre-job briefings, work packages, and RWPs.

9. Review the licensee's verification of contract RPT qualifications to perform job coverage for high exposure rate work and the licensee's training of contract RPTs, and especially those hired to supplement the station's radiation protection staff during outages. Determine whether the licensee provides the contract RPTs with sufficient training with respect to HRAs and VHRAs, and that the scope of this training is based on the licensee's assessment of each individual's documented training, experience, knowledge, and anticipated work assignments. Sufficient training would ensure that each RPT is knowledgeable of the hazards associated with high exposure rate jobs to which he or she may be assigned, specific plant posting requirements, access control practices, and procedures related to accessing and working in HRAs and VHRAs.

10. Review the training given to licensed operators to determine if radiological controls considerations and communications with the radiation protection staff are included with respect to plant operations which affect radiological conditions within the plant and which may create HRAs and VHRAs.

b. Procedures and Work Practices

1. Review written procedures for HRA and VHRA characterization, control and access. Such procedures should be consistent with 10 CFR 20.1601 and 20.1602 and should, among other things, address "transient" HRAs and VHRAs i.e., those areas that infrequently and, perhaps, sporadically become HRAs or VHRAs. Such areas are described in Information Notices referenced in Regulatory Guide 8.38.

   (Note that Section 20.1601(b) of 10 CFR 20 requires that electronic surveillance used for controlling access to an HRA be capable of preventing unauthorized entry.)

2. Review any special radiation survey instructions provided to RPTs.

3. Determine RPTs' and workers' understanding and acceptance of the procedures and instructions reviewed in accordance with 1 and 2, above.

4. Review survey and monitoring results, techniques, and instrumentation to ensure compliance with current requirements (keeping in mind that the distance criterion for HRAs has changed from 18" to 30 cm), and to ensure that changes in radiation levels are noted and evaluated in a timely manner. (Two areas where the magnitude of radiation levels may change dramatically in a relatively short period of time are reactor cavities (e.g., withdrawal of retractable in-core detector thimbles) and traversing in-core probe rooms).

TEMPORARY INSTRUCTION 2515/123

IMPLEMENTATION OF THE REVISED 10 CFR PART 20

SALP FUNCTIONAL AREA: PLANT SUPPORT (SOPLTSUP)

APPLICABILITY: All operating power reactors.

2515/123-01 OBJECTIVES

01.01 To evaluate reactor licensee's radiological controls for implementing the revised 10 CFR Part 20 to ensure that reactor licensees have established programmatic controls that are effective with respect to high radiation areas (HRAs), very high radiation areas (VHRAs), dose to the embryo/fetus, maintaining total effective dose equivalent (TEDE) as low as is reasonably achievable (ALARA) while working in airborne radioactivity areas, and planned special exposures.

2515/123-02 BACKGROUND

The revised 10 CFR 20 became mandatory for all licensees on January 1, 1994. In addition, some licensees voluntarily implemented the revised regulation early. The revised regulation differs in many ways from the "old" 10 CFR 20. This Temporary Instruction (TI) covers changes in 10 CFR 20 philosophy and requirements, emphasizes the importance of controlling access to high and very high radiation areas (HRAs and VHRAs), and recognizes the importance that some licensees have placed on the use of respiratory protection equipment.

The new requirement for justifying the use of respiratory protection devices as part of a program to ensure that each individual's TEDE is maintained ALARA represents a major change in the radiation protection philosophy as embodied in the old 10 CFR 20.

Overexposures have occurred in high radiation areas (many of which would be classified as VHRAs under the revised 10 CFR 20) and the potential exists for lethal exposures in some of these areas. (See Appendix B of Regulatory Guide 8.38, "Control of Access to High and Very High Radiation Areas in Nuclear Power Plants" for references detailing such events).

Although many licensees have voluntarily provided for limiting the dose to the embryo/fetus when this is the desire of the pregnant woman, 10 CFR 20 now requires this. 160018

Also, many reactor licensees have utilized some method for granting "dose extensions" i.e., allowing individuals to exceed the licensee's own administrative dose limit (usually set well below the 10 CFR 20 limit). The revised 10

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CFR 20 allows the licensee to authorize doses to individuals in addition to their "routine" annual dose limit under very strict criteria. Although there are indications that few, if any, licensees will use this option under the regulation, for those that do, it is important that the criteria in the regulation be clearly understood and that this provision of the regulation be prudently implemented.

This TI pertains to licensee implementation of the revised 10 CFR 20. Therefore, in any case where a licensee has implemented the revised 10 CFR 20, and has been inspected in any of the areas covered by this TI, there is no need to repeat such inspection under this TI. Similarly, inspection of an area of a licensee's radiation protection program under this TI need not be repeated under any other inspection procedure.

2515/123-03 INSPECTION REQUIREMENTS

03.01 High and Very High Radiation Areas

a. Review the training, knowledge, and performance of radiation protection technicians (RPTs) and workers:

1. Determine whether the licensee's general employee training program covers HRA and VHRA hazards, access procedures, postings, proper work practices, and radiation workers' responsibilities with respect to such areas.

2. Determine whether the licensee's training and continuing training ("retraining") programs for radiation protection technicians and radiation workers covers HRA and VHRA hazards, access controls and procedures, postings, proper work practices, and each individual's responsibilities with respect to such areas.

3. Determine whether the training provided to contract radiation protection technicians, and especially those hired for outages, covers those aspects of HRAs and VHRAs delineated in 2, above, and is based on the licensee's assessment of each individual's documented qualifications.

4. Determine the adequacy of the qualifications of contract and utility radiation protection technicians who are assigned to provide job coverage for areas that include HRAs and VHRAs.

5. Determine whether licensed reactor operators are provided training with respect to operations which can change radiological conditions within the plant and which may result in the creation of HRAs or VHRAs.

6. Determine whether radiation protection technicians, workers, and licensed operators are performing their duties in an acceptable manner.

b. Determine whether licensee implementing procedures exist for 10 CFR 20.1601 and 20.1602 and their effectiveness.

c. Determine whether management and supervisory oversight are effective with respect to training; procedure generation, maintenance and implementation; follow-up and correction of deficiencies noted in event reports;

and the engendering of effective communications between work groups and supervisory and management levels concerning HRAs and VHRAs.

03.02 Declared Pregnant Women (DPW) and Embryo/Fetus Doses

a. Determine whether the licensee has established adequate policies and procedures for implementing the requirements of 10 CFR 20.1208, "Dose to an Embryo/Fetus."

b. Determine whether the licensee is providing effective training concerning the requirements of 10 CFR 20.1208.

c. Determine whether DPW dose assessments are adequate and whether the doses are within the applicable regulatory limit.

03.03 TEDE/ALARA and Respiratory Protection

a. Determine whether the licensee has established an adequate training program, policy, and procedures to initiate the implementation of 10 CFR 20.1702, "Use of other controls", focusing on the requirement to maintain worker total effective dose equivalent (TEDE) ALARA while performing work in airborne radioactive material areas.

b. Determine whether the licensee has properly trained its workers to maintain their TEDEs ALARA while working in airborne radioactive material areas.

c. Determine the degree of success the licensee has achieved in maintaining worker TEDEs ALARA, while performing work in airborne radioactive material areas.

03.04 Planned Special Exposures (PSEs)

a. Determine if the licensee has a policy that it will not use PSEs.

b. If the licensee has not excluded the possible future use of PSEs, determine whether the licensee has established adequate procedures to be used in the event that the licensee authorizes a PSE.

c. Determine whether any PSEs that have been authorized by the licensee are consistent with regulatory requirements and licensee procedures.

2515/123-04 GUIDANCE

04.01 High and Very High Radiation Areas

General Guidance

The central focus of this TI is to ensure that licensee's programmatic controls implement the requirements of the revised 10 CFR 20, including the ALARA principle, and prevent overexposures. Workers must be protected from the hazards presented by HRAs and VHRAs, and changes in plant operations resulting in significant changes in plant radiological conditions which may create HRAs or VHRAs. See Regulatory Guide 8.38 for a discussion of HRA and VHRA access controls. Subpart G of the statement of considerations for the revised 10 CFR 20, "Control of Exposure from External Sources in Restricted Areas" also contains a discussion of HRA and VHRA access controls. In addition, in the first seven

sets of questions and answers on the revised Part 20 under the headings "10 CFR 20.1601 Control of Access to High Radiation Areas" and "10 CFR 20.1602 Control of Access to Very High Radiation Areas", questions and answers 49, 92, 130, 373, and 385 pertain to HRAs and VHRAs.

Specific Guidance

a. Training and Qualifications of Personnel

1. Review the licensee's general employee training (GET) program to determine whether worker responsibilities when in high and very high radiation areas are adequately addressed.

2. Specifically, review instructions given to radiation workers with respect to the hazards associated with working in such areas and each worker's responsibility to take precautions as directed by the radiation protection department (e.g. on a radiation work permit) or by assigned radiation protection technicians (e.g. at the job location).

3. Determine if workers are trained, knowledgeable, and skilled in the use of radiation monitoring devices (e.g., survey instruments, alarm dosimeters) required by the licensee's radiation protection staff for entry into HRAs and VHRAs. Determine workers' knowledge of the purpose and functions of these devices, and actions that they are expected to take in the event of high readings or alarms. (See Health Physics Position 328 "Proper Operation and Use of Digital Alarm Dosimetry"). Note whether workers are trained with the same alarm dosimeter that they will use in the plant and whether they are cautioned against disabling or switching "off" their alarm dosimeters to avoid alarms or the recording of dose. (Note that some electronic personnel dosimeters may be switched "off" using a small magnet ("refrigerator magnet") in spite of the absence of an external switch for this purpose).

4. Discuss HRA and VHRA hazards and control requirements, including written procedures and policies, with several workers to determine whether members of the general work force are knowledgeable of and understand their responsibilities with respect to such areas.

5. Review the licensee's training and continuing training ("retraining") programs for radiation protection technicians (RPTs). Focus on lesson plans and lectures covering those areas of the plant that exhibit high or very high radiation dose rates during normal operations and/or outages, and those areas of the plant where radiological conditions may change rapidly. Discuss HRA and VHRA hazards and control requirements, including written procedures and policies and the selection and use of personnel monitoring equipment, with several RPTs to determine their knowledge in these areas.

6. Determine (a) whether the licensee's training of workers and RPTs includes the review of industry events and lessons learned from events resulting in near or actual overexposures and (b) whether workers have knowledge of these things. Work activities such as withdrawing in-core probes and thimbles, spent resin movements, fuel movements, and diving operations have a documented history of near and actual overexposures.

7. Determine (a) whether RPT job coverage responsibilities for work to be performed in HRAs and VHRAs are clearly defined and documented (e.g., in written procedures and RWPs) and (b) whether RPTs are knowledgeable of these things.

8. Determine if RPTs understand their stop-work responsibility with respect to departures from the radiological conditions or the work scope described in pre-job briefings, work packages, and RWPs.

9. Review the licensee's verification of contract RPT qualifications to perform job coverage for high exposure rate work and the licensee's training of contract RPTs, and especially those hired to supplement the station's radiation protection staff during outages. Determine whether the licensee provides the contract RPTs with sufficient training with respect to HRAs and VHRAs, and that the scope of this training is based on the licensee's assessment of each individual's documented training, experience, knowledge, and anticipated work assignments. Sufficient training would ensure that each RPT is knowledgeable of the hazards associated with high exposure rate jobs to which he or she may be assigned, specific plant posting requirements, access control practices, and procedures related to accessing and working in HRAs and VHRAs.

10. Review the training given to licensed operators to determine if radiological controls considerations and communications with the radiation protection staff are included with respect to plant operations which affect radiological conditions within the plant and which may create HRAs and VHRAs.

b. Procedures and Work Practices

1. Review written procedures for HRA and VHRA characterization, control and access. Such procedures should be consistent with 10 CFR 20.1601 and 20.1602 and should, among other things, address "transient" HRAs and VHRAs i.e., those areas that infrequently and, perhaps, sporadically become HRAs or VHRAs. Such areas are described in Information Notices referenced in Regulatory Guide 8.38.

   (Note that Section 20.1601(b) of 10 CFR 20 requires that electronic surveillance used for controlling access to an HRA be capable of preventing unauthorized entry.)

2. Review any special radiation survey instructions provided to RPTs.

3. Determine RPTs' and workers' understanding and acceptance of the procedures and instructions reviewed in accordance with 1 and 2, above.

4. Review survey and monitoring results, techniques, and instrumentation to ensure compliance with current requirements (keeping in mind that the distance criterion for HRAs has changed from 18" to 30 cm), and to ensure that changes in radiation levels are noted and evaluated in a timely manner. (Two areas where the magnitude of radiation levels may change dramatically in a relatively short period of time are reactor cavities (e.g., withdrawal of retractable in-core detector thimbles) and traversing in-core probe rooms).

5. Review written procedures for the generation of RWPs for work in HRAs and VHRAs and examine selected RWPs of this type.

6. Observe preparations for, and entry to an HRA or VHRA.

7. Determine the effectiveness of postings and access control methods and their consistency with the requirements of §§ 20.1601 and 20.1602, and Technical Specifications.

   With respect to § 20.1602, some examples of possible "additional measures" for controlling access to a VHRA include (a) enhanced training/instruction of individuals who will have access to the VHRA, (b) special procedures for controlling access to the VHRA, and (c) the use of one or more controls specified in 10 CFR 20.1601(a) in addition to another control method that would, alone, meet the requirements of 10 CFR 20.1601(a) for an HRA. Whatever the "additional measures", the emphasis should be on ensuring that no one is able to gain unauthorized or inadvertent access.

8. Review the licensee's control of keys to HRAs and VHRAs including correlation of keys with specific HRAs and VHRAs, the control of lock and key replacement or lock core and key replacement, security of keys, key log currency, the availability of keys to personnel needing access to HRAs or VHRAs (under both routine and emergency conditions), the periodic review of key logs by responsible supervisory or management personnel, the periodic inventory of keys, actions to be taken following the discovery of the "loss" of a key, and the written procedures implementing these activities.

9. Review the licensee's control of access to, and the storage of, radioactive materials in the spent fuel pool, including the licensee's written procedures for such control. (The need for control measures to prevent the inadvertent raising of activated materials near or above the water surface is covered in subitem 1 of paragraph c.4.2 of Regulatory Guide 8.38. Also, see Information Notice 87-13, "Potential for High Radiation Fields Following Loss of Water from Fuel Pool").

c. Management and Supervisory Oversight

1. Review supervisory attention to training; procedure generation, maintenance and implementation; follow up and correction of deficiencies noted in event reports; RWPs and job packages that involve HRAs or VHRAs.

2. Verify that managers and supervisors maintain an awareness of HRA and VHRA conditions and access controls by means of personal plant tours.

3. Review events and corrective actions involving HRAs or VHRAs.

4. Determine communication effectiveness between work groups and between work groups and supervisory and management levels concerning HRAs and VHRAs.

04.02 Declared Pregnant Women (DPW) and Embryo/Fetus Doses

Note: The following guidance includes references to publicly available documents in the NRC Document Control System. Microfiche addresses given for these documents refer to the microfiche stored in microfiche cabinets at every NRC NUDOCS/AD Work Station. These microfiche addresses are not provided for different documents containing questions and answers on the "new" 10 CFR Part 20 because these questions and answers are being compiled in a more convenient form and made available to NRC staff as a single document containing all of the questions and answers that have been issued to date.

General Guidance

See the discussion of "Dose to an Embryo/Fetus" in the statement of considerations for the new Part 20 (56 FR 23372-23374).

See the definitions of "declared pregnant woman" (DPW) and "embryo/fetus" in 10 CFR 20.1003.

See Regulatory Guide 8.36, *"Radiation Dose to the Embryo/Fetus"*, and Regulatory Position 2.3, "Dose to the Embryo/Fetus," in Regulatory Guide 8.7, Rev. 1, *"Instructions for Recording and Reporting Occupational Radiation Exposure Data"*, and Regulatory Position 4, "Exposures of Minors and Declared Pregnant Women," in Regulatory Guide 8.35, *"Planned Special Exposures"*.

See the following questions and answers in the first seven sets of questions and answers on the revised Part 20 under the heading "10 CFR 20.1208 Dose to the Embryo/Fetus": 59, 84, 120, 138, 382, 416, 439, 440, 441, 442, and 443.

A declaration of pregnancy must be voluntary and must be in writing; the declaration by the woman is revocable by the woman. The woman does not need to provide any "medical proof" of pregnancy; she is a "declared pregnant woman" if she provides a written declaration that she is pregnant and only if she provides such a written declaration.

Specific Guidance

a. Licensee procedures should include:

1. The means for determining whether or not individual monitoring of the DPW to determine the embryo/fetus dose is required (in accordance with 10 CFR 20.1502) or an indication that this monitoring will be done voluntarily for all DPWs.

2. The means for controlling the dose to the embryo/fetus within the specified regulatory limit of 0.5 rem during the pregnancy.

3. The means for avoiding "...substantial variation above a uniform monthly exposure rate so as to satisfy the limit..."[20.1208(b)].

Note: In the case of "United Auto Workers *vs.* Johnson Controls", The U. S. Supreme Court held that Title VII of the Civil Rights Act of 1964, as amended, forbids sex-specific fetal-protection policies. The provisions of 10 CFR Part 20 concerning protection of the embryo/fetus (which are consistent with that Supreme Court decision) do not provide a basis for policies and procedures that discriminate on the basis of sex against women who are not DPWs. Examples of

such policies and procedures are (a) licensee requests that women sign statements that they are not pregnant and (b) licensee imposition of administrative dose limits for women (other than DPWs) that are different from the administrative limits for men. (See HPPOS-249 at microfiche address 62160-095 and HPPOS-252 at microfiche address 62811-187.) Examples of policies and procedures that appear to discriminate on the basis of sex should be noted in the inspection report.

b. Review the licensee's general employee training and any training offered by the licensee specific to the subject of declared pregnancy and dose to the embryo/fetus for consistency with the requirements of 10 CFR 20. Interview selected women to determine each woman's knowledge with respect to the applicable requirements of 10 CFR 20, her responsibilities and the licensee's responsibilities under the regulation. (Note: Regulatory Guide 8.13, Rev. 2, "Instructions Concerning Prenatal Radiation Exposure." will be updated to reflect the requirements of the revised 10 CFR 20 and current scientific knowledge concerning radiation risks for the embryo/fetus).

c. Examine a selected sample of records of embryo/fetus doses for declared pregnant women. (Relevant regulatory requirements are contained in 10 CFR 20.1208, 20.1502(a)(2) and (b)(2), and in 20.2106(e) and (f)).

Assessment of the dose to the embryo/fetus should be in accordance with the guidance provided in Regulatory Guide 8.36. Dose assessment methods tnat do not appear to be consistent with the regulatory positions in Regulatory Guide 8.36 are to be described briefly in the inspection report even if these methods appear to be acceptable.

Records and reports of embryo/fetus dose should be consistent with the guidance in Regulatory Position 2.3 of Regulatory Guide 8.7.

04.03 TEDE/ALARA and Respiratory Protection

General Guidance

See the discussion in Subpart H in the statement of considerations for the revised Part 20 (56 FR 23378).

See the following questions and answers in the first seven sets of questions and answers on the implementation of the revised 10 CFR 20 under the heading "10 CFR 20.1702 Use of Other Controls": 386, 387, 449. Also see question and answer 60 under the heading "10 CFR 20.1703 Use of Individual Respiratory Protection Equipment."

Given the major paradigm shift/culture change necessary (changing from a general overuse of respirators to an environment where respirators will be relied on much less frequently) to fully implement TEDE/ALARA, the major thrust of this section of the TI is to determine that the licensee has effectively started the process for change and is making reasonable progress. Each licensee should have in place the necessary procedures, have ongoing training programs, and be actively gaining worker acceptance for a general re-evaluation of its respiratory protection program and, where consistent with maintaining TEDEs ALARA, a reduction in the use of respirators. Complete implementation of this process should not be expected in all cases--appropriate enforcement action in this area, for example, should be reserved for those situations where a licensee has not made a reasonable start/progress in implementing TEDE/ALARA.

Specific Guidance

a. Review the licensee's training program.

Early implementers of the revised 10 CFR 20 that have demonstrated good success in reducing respirator use with a corresponding positive worker acceptance/support of the process have noted that early worker "buy in" to the process is a vital key. These successful plants have established training programs and opportunities for worker feedback and discussion that has fostered worker acceptance for workplace change. Having an ongoing, effective mechanism to factor in worker input and feedback has been shown to be an important element in the continued success of this process.

b. Interview a selected sample of plant workers and their first-line supervisors (foremen) to determine their level of knowledge and support of the policy and procedures, and note any worker problems with maintaining worker TEDEs ALARA (e.g., worker acceptance of a reduction in the use of respirators).

c. Examine all efforts by the licensee to comply with the TEDE/ALARA requirement.

The reduction in respirator use is the most visible and most discussed action associated with compliance with the TEDE/ALARA requirement. However, as noted in 10 CFR 20.1702, the licensee may take other actions to satisfy this requirement e.g., limiting the use of local high efficiency particulate air (HEPA) filter units on the basis of averting external dose incurred in setting up and servicing these units. Any such actions should be examined in light of the TEDE/ALARA requirement and noted in the inspection report, as should changes in the licensee's use of respirators. The inspector's report should also document those cases where respirators are used in accordance with a worker's demand for respiratory protection equipment rather than in response to a licensee finding that such use is consistent with the ALARA principle.

It should not be assumed that an overall reduction in respirator use or a reduction in respirator use for specific jobs is always consistent with the ALARA principle.

d. Review the licensee's implementing procedures.

Note that written evaluations are not required for each use of respiratory equipment. See question and answer 60 for guidance on establishing worker dose thresholds (and other criteria) that define when the licensee should document these evaluations.

In the process of balancing the external and internal worker risks, licensees will usually assume some loss of worker efficiency when wearing a respirator. While changes in worker efficiency are ideally determined empirically by the use of realistic mockups (this is not required), literature searches of workplace respirator studies designed to determine loss (or gain) in worker efficiency show expected findings. That is, the effect of wearing a respirator varies with a number of variables--environmental conditions, type of respirator, level of work (effort), work duration, type of work, individual worker differences, etc.

Therefore, it cannot be assumed that worker efficiency will increase if

workers stop using respirators.

Because of the many variables associated with respirator use for specific jobs, licensees may be found using a range of efficiency factors. However, in the absence of specifically applicable factors, licensees may use default factors for each type of respirator. The following worker efficiency improvements resulting from removing respirators are documented in the literature (chiefly from military, and non-nuclear workplace studies):

RESPIRATOR TYPE	RANGE (%)
Negative pressure, full-face	5--30
Supplied air, hoseline	15--60
SCBA	40--200

The use of an efficiency factor higher than those above should be technically justified by the licensee.

e. Examine a selected sample of documented TEDE/ALARA evaluations.

f. Determine whether the licensee has experienced any increases in facial and nasal contaminations associated with decreased respirator use and the licensee's response to any such increase.

04.04 Planned Special Exposures (PSEs)

General Guidance

See the discussion of PSEs in the statement of considerations for the revised Part 20 (56 FR 23371-23372).

See the definition of a PSE in 10 CFR 20.1003.

See Regulatory Guide 8.35, *"Planned Special Exposures"*.

See the following questions and answers in the first seven sets of questions and answers on the revised 10 CFR 20 under the heading "10 CFR 20.1206 Planned Special Exposures:" 8, 24, 63, 135, 136, 137. Also see question and answer 112 under the heading "10 CFR 20.2105 Records of Planned Special Exposures."

Specific Guidance

a. Determine whether the licensee has a policy prohibiting PSEs. If the licensee has such a policy:

   1. This policy is to be noted in the inspection report, and

   2. No further inspection of this area is required.

b. Licensee procedures for approval of PSEs should include:

   1. Provisions for ensuring that PSEs are used only in exceptional situations [10 CFR 20.1206(a)],

   2. Designation of the individual(s) delegated the authority to

authorize a PSE [10 CFR 20.1206(b)],

3. Provisions for informing and instructing the individuals involved in accordance with 10 CFR 20.1206(c),

4. Provisions for ensuring that the requirements of 10 CFR 20.2104(b) and 20.2104(e)(2) are met for individuals who are to be permitted to participate in PSEs [10 CFR 20.1206(d)],

5. Provisions for ensuring that the PSE limits of 10 CFR 20.1206(e) [subject to 10 CFR 20.1201(b)] are met,

6. Provisions for ensuring that the records of the conduct of PSEs are maintained in accordance with 10 CFR 20.1206(f), 20.2105, and 20.2106 and that written reports are submitted in accordance with 10 CFR 20.1206(f), 20.2202(e), and 20.2204,

7. Provisions for ensuring that individual doses resulting from PSEs are recorded and reported to the individuals involved in the PSEs in accordance with 10 CFR 20.1206(g).

c. The relevant requirements of 10 CFR Part 20 are in sections 20.1201(b), 20.1206, 20.2104(b), 20.2104(e)(2), 20.2105, 20.2106, 20.2202(e), and 20.2204.

2515/123-05 REPORTING REQUIREMENTS

Document inspection findings in a routine inspection report. In addition to routine regional distribution, send a copy to James E. Wigginton, PRPB, DRSS, NRR by mail, facsimile, or E-mail.

2515/123-06 COMPLETION SCHEDULE

This TI shall be implemented immediately as part of routine inspections during either outage or non-outage periods (outage periods are preferred) and shall remain in effect for two years after its date of issue.

2515/123-07 RESOURCE ESTIMATE

It is anticipated that 30 to 35 inspector-hours on-site will be needed to complete the requirements of this instruction. Multi-unit sites require the same amount of time.

2515/123-08 REGULATORY INFORMATION TRACKING SYSTEM (RITS) INPUT

Direct inspection effort expended in fulfilling the requirements of this instruction is to be charged to 2515/123 for RITS with an Inspection Program Element (IPE) code of "SI" (Safety Issues Program).

2515/123-09 CONTACT

Questions concerning this TI should be addressed to Jack M. Bell (301-504-1083) James E. Wigginton (301-504-1059) or L. J. Cunningham (301-504-1086).

END