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OFFICE OF NUCLEAR REACTOR REGULATION

Office Letter Transmittal

TO: All NRR Employees

SUBJECT: NRR OFFICE LETTER NO. 1303, REVISION 1, "RADIATION PROTECTION PROCEDURES FOR NRR PERSONNEL"

PURPOSE: This office letter supplements NRC Management Directive 10.131 (MD 10.131), "Protection of NRC Employees Against Ionizing Radiation," July 23, 1996, with additional guidance for the protection of NRR employees against ionizing radiation that they could encounter while performing their NRC duties. This revision supersedes NRC Office Letter No. 1303, October 30, 1991. Changes affected a significant portion of the office letter so change bars were not used.

DIVISION OF ORIGIN: Division of Reactor Program Management

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NRR OFFICE LETTER NO. 1303, REVISION 1

RADIATION PROTECTION PROCEDURES FOR NRR PERSONNEL

RESPONSIBILITIES AND AUTHORITIES

NRR Staff

Each NRR employee making an official visit to an NRC-licensed facility where exposure to radiation or radioactive material is expected to exceed the administrative limits of this office letter shall notify the NRR radiation safety officer (RSO) and obtain and use an NRC-issued personal dosimeter during the visit. Each NRR employee who frequently visits NRC-licensed facilities may request a permanently assigned dosimeter from the NRR RSO. Permanently assigned dosimeters are exchanged quarterly as scheduled by the Office of Administration. Each NRR employee assigned an NRC dosimeter shall make every effort to return or exchange the dosimeter in a timely manner and promptly report lost or damaged dosimeters.

Each NRR employee to whom a licensee issues one or more individual monitoring devices shall give the licensee a signed estimate of his or her year-to-date occupational dose so that the licensee can meet the requirements of Section 20.2104(a)(1) of Title 10 of the Code of Federal Regulations (10 CFR) with respect to that individual, as permitted by 10 CFR 20.2104(c)(1). At a licensee's request, an NRC employee shall give the licensee a signed statement that records of that employee's cumulative occupational radiation dose prior to the current year, requested pursuant to 10 CFR 20.2104(a)(2), are not provided. (A licensee should not impede an NRC employee's free access to a licensee's facility because a cumulative occupational dose history for the NRC employee is lacking. Challenges to this position should be referred to the NRR employee's supervisor for resolution.)

Each NRR employee shall forward any report of licensee evaluations on his or her intakes of radioactive material to the NRR RSO for assessment and inclusion in the NRC employee dose records. Each NRR employee shall immediately inform the NRR RSO of involvement in any radiological occurrences (e.g., received uncontrolled radiation exposure, personal contamination) at a licensed facility.

Each female NRR employee shall inform her immediate supervisor and the NRR RSO, in writing, if she wishes to declare herself pregnant (thereby subjecting herself to dose limits of MD 10.131 Handbook, Part II(G)) on being assigned tasks that could expose her to ionizing radiation.

All NRR Supervisors

Each supervisor shall ensure that each employee under his or her supervision is informed of the provisions in this office letter and MD 10.131 before being assigned tasks that could expose the employee to ionizing radiation.

Each supervisor shall ensure each employee under his or her supervision that requires unescorted access to a reactor site has received or will receive site access training as described in NRR Office Letter 904, "Unescorted Access at Nuclear Power Sites."

Each supervisor shall ensure that each employee under his or her supervision is or will be provided with radiation dosimeters (such as a thermoluminescent dosimeter or film badge), as prescribed by this office letter and MD 10.131.

Radiation Safety Officer (RSO)

The NRR RSO shall provide instructions to the NRR staff and supervisors so that they can comply with the requirements of this office letter and MD 10.131. Questions of interpretation of MD 10.131 shall be forwarded to the Office of Nuclear Materials Safety and Safeguards (NMSS) in accordance with Section 10.131-033 of that directive.

The NRR RSO shall review radiation exposure records for NRR employees and submit updates of the employee exposure database (EED) to the Office of Nuclear Regulatory Research (RES), as needed.

The NRR RSO shall immediately inform the NMSS RSO, the NRR office director, and the designated agency safety and health official of any uncontrolled event that resulted, or could have resulted, in an exposure of an NRR employee in excess of the limits specified in MD 10.131.

The NRR RSO shall establish a point of contact with all headquarters offices.

The NRR RSO shall notify all employees who received 50 percent of the applicable dose limit for the current exposure period and shall establish a separate tracking system for such employees to ensure that the dose limits are not exceeded.

BASIC REQUIREMENTS

General

Although NRR does not possess, or directly control radioactive sources, NRR employees may be occupationally exposed to radiation while conducting NRC business at licensed (or non-licensed) nuclear facilities. In accordance with 10 CFR Part 20, NRC licensees are legally responsible for limiting the exposure of workers (including NRR visitors) to radioactive material in their possession or under their control. Because MD 10.131 requirements parallel the requirements of 10 CFR Part 20, NRR will generally rely on licensee programs in complying with MD 10.131. NRR employees will not normally be required to perform independent radiation surveys or monitoring at licensed facilities, except those associated with detecting personal radioactive contamination. NRR employees shall comply with all facility radiation protection procedures and instructions during site visits, to the extent practicable.

For additional information about licensee compliance with certain 10 CFR Part 20 requirements for NRC employees and about related responsibilities of NRC employees, see the attached Health Physics Position.

This Health Physics Position was issued to the regions by memorandum dated May 5, 1994 (reference 4). The information in this document is also relevant to NRC employees who are to be granted escorted access to a licensee's facility.

Administrative Limits

NRR employees are not expected to exceed the thresholds at which individual monitoring is required for exposure to radiation from sources external to the body or from intakes of radioactive materials. NRR employees conforming to the following administrative limits shall not normally require personal monitoring during the conduct of their duties. For exposure to external radiation, no NRR employee is authorized to exceed a deep dose equivalent of 50 mrem per site visit or 500 mrem per year without approval of the NRR RSO, who will evaluate the need for monitoring. Similarly, for the exposure to airborne radioactive materials, no NRR employee is authorized to receive an intake such that the sum of the ratios of the intake of each radionuclide (I_i) to its respective annual limit of intake (ALI_i), as listed in 10 CFR Part 20, Appendix B, Table 1, Column 1, exceeds 0.01 per site visit or 0.1 per year without the approval of the NRR RSO.

$$\Sigma_i \, (I_i)/(ALI_i) \leq 0.01 \text{ per visit, or } 0.1 \text{ per year}$$

Exposure Records

The Office of Nuclear Regulatory Research maintains radiation exposure records on the EED. The RSO will review the results of personnel radiation monitoring as reported by the NRC dosimetry contractor or as provided by licensees. The RSO shall investigate and resolve any anomalous readings and, by written request, will provide updates or revisions of the EED to RES.

Personnel Radiation Monitoring

Each NRR employee who is assigned a task that may involve exposure to ionizing radiation shall obtain and use an NRC-issued personal dosimeter during the conduct of that task if:

1. The resulting radiation dose is likely to exceed 10 percent of any of the limits listed in Table I-1 in MD 10.131. (That is, the assigned task could result in radiation exposures in excess of the administrative limits discussed above, or may involve exposure to significant levels of alpha, beta, or other non-penetrating forms of ionizing radiation.)

2. The task involves entry into a high radiation area or very high radiation area.

3. The employee is under the age of 18.

4. The employee has declared herself pregnant and thereby subject to the dose limits of MD 10.131 Handbook, Part II(G).

The reading from the NRC-issued dosimeter shall normally serve as the official dose of record, unless there is reason to suspect the reading, and shall be recorded in the NRC EED. If personnel monitoring is required but an NRC

dosimeter is not available (e.g., the need to enter a high radiation area during a reactor site visit was not evident until after the employee arrived on site), the NRR RSO can authorize the use of licensee-issued dosimeters to meet the above personnel monitoring requirement. In such cases the NRR employee shall request, using NRC Form 525, that the licensee forward the dosimetry results to the NRR RSO.

The Office of Administration maintains radiation dosimeters and issues them to headquarters personnel as needed. NRR employees who visit NRC-licensed facilities at least once per quarter may request a permanently assigned dosimeter (which is exchanged quarterly) from the NRR RSO.

As indicated above, NRR employees are expected to follow, to the extent practicable, licensee radiation protection procedures. This includes participation in a licensee's bioassay program, as appropriate. Each NRR employee shall forward to the NRR RSO any report of an intake of radioactive material provided by a licensee (or other facility operator) for assessment and inclusion in the EED as appropriate. Reports indicating zero or no intake of radioactive material should not be forwarded.

Controlling Intakes of Airborne Radioactivity

NRR employees will not normally enter airborne radioactivity areas, as defined in 10 CFR 20.203(d), during the conduct of their duties. When necessary, licensees can generally meet the requirements of 10 CFR 20.1702 for controlling the intake of radioactive materials by NRR employees without the use of respiratory protective equipment. NRR employees may use licensee-supplied respiratory protection equipment only if they meet all the requirements of the licensee's respiratory protection program, including a determination of physical fitness by a medical practitioner, special training on the device, and the passing of a respirator fit test.

Foreign Travel

NRR employees planning foreign travel that is likely to involve exposure to occupational sources of radiation shall inform the RSO at least 15 working days before such travel begins.

The RSO shall specify any additional precautions needed to ensure the traveler's safety. Additional precautions considered should include

1. Base-line whole-body counting before travel begins.

2. The use of independent survey instruments and independent surveys.

NRC-issued dosimeters will normally be used for the dose of record during occupational exposure to radiation sources while the NRR employee is on foreign travel. At least one "control badge" will accompany the traveler(s) to evaluate any exposures to the dosimeters during transportation. The RSO will instruct the traveler on the handling and use of dosimeters during foreign travel.

If a traveler must rely on dosimeters other than NRC-issued dosimeters while abroad (e.g., dosimeters provided by a facility during an unplanned tour), the traveler will obtain records of each exposure and forward them to the NRR RSO.

EFFECTIVE DATE

This office letter is effective immediately.

REFERENCES

1. 10 CFR Part 20, "Standards for Protection Against Radiation"

2. NRC Management Directive (MD) 10.131, "Protection of NRC Employees Against Ionizing Radiation"

3. NRR Office Letter No. 904, Rev. 1, "Unescorted Access at Nuclear Power Sites"

4. Memorandum from F. Congel to C. W. Hehl, et. al., "Health Physics Position: Compliance with Certain 10 CFR Part 20 Requirements for NRC Employees to be Granted Unescorted Access to Licensee Facilities," May 5, 1994

Attachment: Health Physics Position

cc: J. Taylor, EDO
J. Milhoan, DEDR
Regional Administrators
SECY
OGC
PUBLIC

ATTACHMENT

HEALTH PHYSICS POSITION

Compliance with Certain 10 CFR Part 20 Requirements for NRC Employees to be Granted Unescorted Access to Licensee Facilities

QUESTION:

(a) In consideration of a licensee's need to comply with the requirements of 10 CFR 20.2104, "Determination of prior occupational dose," what information on the prior occupational dose of an NRC inspector, or other NRC employee, can a licensee expect the inspector (or other NRC employee) to provide when that individual is to have unescorted access to the licensee's facility?

(b) How is 10 CFR 20.1702, "Use of other controls," to be applied to NRC employees who are to have unescorted access to the licensee's facility?

ANSWER:

(a) Under 10 CFR 20.2104, prior occupational doses need be determined only for individuals who are likely to receive an occupational dose requiring individual monitoring. Under 10 CFR 20.1502, individual monitoring is required for (1) individuals who are likely to receive, in a year, 10 percent of the occupational dose limits at the licensee's facility and (2) individuals who enter a high or very high radiation area.

Generally, no NRC employee is likely to receive an occupational dose exceeding 10 percent of the occupational dose limits in a year at any licensee's facility. However, some NRC employees, particularly inspectors, do enter high and very high radiation areas at licensee facilities and are required to be monitored. Furthermore, NRC expects that, for liability and other considerations, some licensees will want to provide appropriate dosimeters and monitoring to NRC inspectors and other NRC employees at their facilities; however, such activities should not impede or delay NRC inspection efforts. NRC employees are expected to follow licensee procedures to the greatest extent possible. **Each NRC employee to whom a licensee will issue one or more individual monitoring devices will provide the licensee with a signed estimate of that employee's prior occupational dose for the current year so that the licensee can meet the requirements of 10 CFR 20.2104(a)(1) with respect to that employee as permitted by 10 CFR 20.2104(c)(1).**

Under 10 CFR 20.2104(a)(2), a licensee is required only to attempt to obtain the records of cumulative occupational dose received before the current year. In addition, under 10 CFR 20.2104(b), cumulative occupational exposure information is required only when planned special exposures may be allowed. Licensees do not approve planned special exposures of NRC personnel, and it is unlikely that NRC will approve such exposures for NRC personnel.

Therefore, records of cumulative occupational dose received before the current year are not needed for control of exposure of NRC employees and will not be provided by NRC employees. **At a licensee's request, an NRC employee will**

provide the licensee with a signed statement that records of that employee's cumulative occupational radiation dose prior to the current year, requested pursuant to 10 CFR 20.2104(a)(2), will not be provided. Access to a licensee's facility must not be limited based on the lack of cumulative occupational dose history information for an NRC employee.

The NRC has its own program for radiation protection of its employees. Monitoring and control of exposures for NRC employees are established by NRC policy, which is generally consistent with the provisions of the revised 10 CFR Part 20. For external exposure, NRC personnel are monitored through a NVLAP-accredited thermoluminescent dosimeter (TLD) program and are provided appropriate dosimeters for use during their NRC-related duties.

(b) For internal exposures, NRC employees are not expected to exceed the threshold, in 10 CFR 20.1502(b), at which individual monitoring for intake of radioactive materials is required. Furthermore, because of the relatively brief exposure times of NRC employees in airborne radioactivity areas, licensees can generally meet the requirements of 10 CFR 20.1702 for NRC employees without requiring the use of respiratory protective equipment. (Many NRC employees have not been qualified to wear respiratory protective equipment.) As indicated above, NRC employees are expected to follow licensee procedures to the greatest extent possible, provided that doing so does not limit the employees' access to the facility. (Such procedures include the use of prescribed protective clothing and contamination survey requirements.) Inspectors and other NRC employees will also participate in a licensee's bioassay program, as appropriate. Positive indications of intake meeting the licensee's procedural requirements for evaluation should be evaluated in a timely manner and reported promptly to the affected individual. Reports on evaluations of intakes will be forwarded by the NRC employee to the cognizant NRC Radiation Safety Officer for assessment and inclusion in NRC employee dose records.