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CHAPTER 1

REGULATIONS

1.1 PURPOSE

To provide Department personnel, either using or responsible for equipment containing radioactive material, with information and instructions to ensure safe and proper operation of the equipment; and to state how the Department will fulfill some of the requirements found in its application for a radioactive materials license.

1.2 SCOPE

1.2.1

Material contained herein is drawn from many sources in an effort to provide necessary information and instructions in a readily available form. Material is not intended to conflict with any regulations or procedures established by government agencies or equipment manufacturers regarding safe and proper operation of equipment containing radioactive material.

1.2.2

Nuclear surface moisture-density gauges (density gauges) comprise almost all Department equipment containing radioactive material. The Radiation Safety Manual (RSM) has been prepared primarily for ownership and operation of density gauges. Other equipment containing radioactive materials possessed by the Department includes a depth density probe, a depth moisture probe, an asphalt content gauge, and other equipment.

Operators of other equipment containing radioactive material shall be required to receive a Certificate of Qualification the same as gauge operators. The reason is to ensure all employees involved with radioactive materials are aware of the Department's radioactive materials license, the obligations of the license, and the basic safety practices associated with operating nuclear equipment.

1.3 GENERAL

1.3.1 Regulation

It is important that all persons involved with radioactive materials be aware of the authority, which is the source of the regulations governing use of these materials. These regulations begin with the U.S. Nuclear Regulatory Commission (NRC) and the U.S. Department of Transportation (USDOT). Regulations and requirements for compliance are made known to owners of equipment containing radioactive material through issuance of a license by the NRC or a state issued license. Ultimately, this information reaches Department users through information and instructions contained in the RSM.

1.3.1.1 Authority – Under the Atomic Energy Act of 1954, the NRC, formerly Atomic Energy Commission, was given responsibility for all control over radioactive materials. Under the Department of Transportation Act of 1966, the USDOT was given regulatory responsibility for safety in the transportation of all hazardous materials, including radioactive materials. Except for certain small quantities and specific products, a license is required from the NRC for possession and use of such materials.

1.3.1.2 Agreement State – Several states have entered into formal agreements with the NRC whereby the regulatory authority over by-product, source, and less than critical quantities of special nuclear material has been transferred to the state from the NRC. Florida is an “agreement state”.

1.3.1.3 From the Florida Statutes (F.S.) –

(A) Declaration of policy -It is the responsibility of the State of Florida, for protection of the public health and safety:

- (1) To institute and maintain a program to permit development and utilization of sources of radiation for purposes consistent with the health and safety of the public.
- (2) To prevent any associated harmful effects of radiation upon the public through the institution and maintenance of a regulatory program for all sources of radiation, providing for:

- (a) A single effective system of regulation within the state.
 - (b) A system consonant with those of other states.
 - (c) Compatibility with the standards and regulatory programs of the Federal Government for byproduct, source, and special nuclear materials. (Section 404.022, Florida Statutes)
- (B) "Agreement state" means any state which has consummated an agreement with the United States Nuclear Regulatory Commission under the authority of s. 274 of the Atomic Energy Act of 1954, as amended, as authorized by compatible state legislation providing for acceptance by that state of licensing authority for agreement materials and the discontinuance of such activities by the United States Nuclear Regulatory Commission. (Section 404.031, Florida Statutes)

1.3.1.4 Florida Administrative Code –Rule Chapter 64E-5, Control of Radiation, F.A.C., comprises the DOH, (BRC) regulations for control of radiation hazards.

1.3.2 Radioactive Materials License

As an agreement state, the State of Florida issues a license to those possessing and using radioactive material within the state.

1.3.3 Compliance

1.3.3.1 Department Personnel – Shall comply with all provisions of the RSM and all other pertinent instructions and requirements so as to ensure safe handling and transporting of equipment containing radioactive material, and to ensure continuance of the Department's license. Regarding compliance, the Rule Chapter 112.311-112.326, Code of Ethics for Public Officers and Employees, F.A.C. addresses unacceptable conduct standards and the various corrective actions that may be taken by supervisors for violation of these standards.

- (A) Supervision at the Project Level – On a FDOT construction project, the Project Administrator is directly responsible for the safe and proper operation of nuclear equipment by Department personnel. If

the equipment is in operation in the field but not on a construction project, the person in charge at the location of the activity is directly responsible for the safe and proper operation. Directly responsible means ultimate responsibility for ensuring compliance with the requirements of the RSM and all other relevant documents.

- (B) Project Level Actions by the DRSO – The DRSO or authorized designee should be frequently available to gauge operators and Project Administrators to help with implementing the requirements of the RSM. Assistance may be in many forms such as instructing, pointing out violations, examining density gauges, etc., i.e. all those activities necessary to help ensure safe and proper operation of nuclear equipment.
- (C) Action for Noncompliance – If, in the opinion of the DRSO and the District Materials Engineer (DME), an employee is guilty of repeated and/or several instances of noncompliance with the requirements of Section 1.3.1.1, the DME is authorized to deny an employee possessing a Certificate of Qualification the privilege of operating equipment containing radioactive materials. This denial shall be accomplished by written notice to the district Director of Operations with copies to appropriate parties.

The RSO is authorized the same right of denial due to noncompliance with Section 1.3.1.1 in the case of the SMO and Central Office employees. This denial shall be accomplished by written notice to appropriate parties.

- 1.3.3.2 Non-departmental Personnel – During the period of construction, those handling and transporting equipment containing radioactive materials when on FDOT Right of Way shall comply with the provisions of their radioactive materials license authorizing their possession of said equipment. License must be issued by the State of Florida, the NRC, or an “agreement” state. If the license is from an “agreement” state, it must accompany general license issued by DOH,BRC. When general license was not received, a copy of the request letter submitted to DOH must accompany the license from NRC or an agreement state. Right-of-Way is defined in the section titled “Definitions and Terms” in the Department’s Standard Specifications for Road and Bridge Construction.

- (A) Violations by Non-departmental Personnel – It is the responsibility of DOH, BRC, to enforce the provisions of a license; nevertheless,

FDOT personnel observing continuous radiation safety violations by non-FDOT personnel on Department construction projects or property should report such violations to the DRISO, who will coordinate appropriate action.

- (B) Radioactive Materials License – Non-departmental personnel will make a copy of their radioactive material license and supporting documents, i.e. personnel training and qualification records, density gauge information, etc., available upon request, for review by the Project Administrator and the DRISO. Project Administrator shall obtain a copy of the radioactive material license for non-departmental personnel.
- (C) Non-departmental Personnel are subject to monitoring for compliance with Chapter 9, FDOT Employed Consultants, of the RSM, Topic No. 675-050-001 and responsible for necessary corrective action as a result of this monitoring.

1.3.4 Loaning Department owned Nuclear Equipment

1.3.4.1 Loaning to Contractor– Department owned nuclear equipment shall not be loaned to the Department's Contractors nor their Sub-Contractors or Suppliers for any purpose.

1.3.4.2 Loaning to Consultants –Density gauges may be loaned to the Department hired Consultants to perform testing on the Department projects. Refer to Chapter 9, FDOT Employed Consultants, of the RSM, Topic No. 675-050-001 for further details.

1.3.5 Storage of Non-department Owned Nuclear Equipment

Only FDOT nuclear equipment is permitted to be stored in FDOT storage facilities. Non-department owned nuclear equipment is not to be stored in FDOT storage facilities. Non-department owned nuclear equipment may be stored at the Department owned buildings and facilities. Refer to Section 4.7, Storage of Non-departmental Equipment Containing Radioactive Materials in Field Offices, of the RSM, Topic No. 675-050-011 for details.

1.4 LICENSOR

As previously stated, Florida is an agreement state which issues a license to those possessing and using radioactive materials within the state. Applications are received and licenses issued by:

State of Florida
Department of Health
Bureau of Radiation Control
Bin C21, 4052 Bald Cypress Way
Tallahassee, Florida 32399-1741

1.4.1 Licensee

Department's license is held in the name of State of Florida Department of Transportation, Radioactive Materials License Number 109-1.

1.4.2 License Administrator

The RSO is assigned primary responsibility for administering the license and compliance with all requirements necessary for the Department to possess the license. As administrator, the RSO is responsible for maintaining the records as required by the license and regulations.

1.4.3 Department's Responsibility

Possession of a license obligates the Department to scrupulously perform the actions it stated it would perform to comply with the requirements of its license. This commitment is the condition under which the Department is able to receive and retain the license. Failure to comply could mean a severe fine, loss of license, or both, together with the adverse publicity.

1.5 ABBREVIATIONS AND ACRONYMS

- (1) **ALARA:** As Low As Reasonably Achievable
- (2) **BRC:** Bureau of Radiation Control
- (3) **CEI:** Construction Engineering Inspection
- (4) **C.F.R.:** Code of Federal Regulations
- (5) **DOH:** Department of Health

- (6) **DME:** District Materials Engineer
- (7) **DRSO:** District Radiation Safety Officer
- (8) **ERC:** Environmental Radiation Control
- (9) **ERI:** Emergency Response Information
- (10) **ERO:** Emergency Response Office
- (11) **F.A.C.:** Florida Administrative Code
- (12) **FDOT:** Florida Department of Transportation
- (13) **IID:** Inspection In Depth
- (14) **NRC:** Nuclear Regulatory Commission
- (15) **P.E.:** Professional Engineer
- (16) **RMSA:** Radioactive Materials Storage Areas
- (17) **RSM:** Radiation Safety Manual
- (18) **RSO:** FDOT Radiation Safety Officer
- (19) **SMO:** State Materials Office
- (20) **USDOT:** U.S. Department of Transportation