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Jeb Bush  
Governor

Robert G. Brooks, M.D.  
Secretary

November 5, 1999

Mr. Tom O'Brien  
Office of State Programs  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Dear Mr. O'Brien:

This is in response to your November 2 (SP-99-074) request for technical information. We are sending our reply both electronically to be timely and by regular mail.

Attachment A is our response to your question #42 to identify and provide the definitions Florida uses for byproduct material, radioactive waste, radioactive material, sources of radiation, NARM, natural radioactivity and sanitary sewerage.

Attachment B is our response to your question #43 to identify what if any radiological criteria pertaining to the unrestricted release of solid materials that Florida uses in any standards, guidance or license authorizations and whether the criteria differentiates between surficial and volumetric contamination.

Attachment C contains the information requested about the release of solid radioactive materials.

I hope this provides the information you need. If you have any questions, please contact me.

Sincerely,

*William A. Passero*  
for Michael N. Stephens  
Environmental Administrator

MNS

Attachments: Attachment A  
Attachment B  
Attachment C

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Chapter 404 Florida Statutes "Radiation" is available at:

<http://www.leg.state.fl.us/citizen/documents/statutes/StatuteBrowser99/index.cfm?Mode=DisplayStatute&URL=Ch0404/titl0404.htm>

Chapter 64E-5, Florida Administrative Code, is available at:

<http://www.doh.state.fl.us/environment/radiation/regs/64e-5tab.htm>

Florida Regulation 64E-5.101(21) "Byproduct material" means:

- (a) Any radioactive material, except special nuclear material, yielded process of producing or utilizing special nuclear material; and
- (b) The tailings or wastes produced by the extraction or concentration of uranium or thorium from ore processed primarily for its source material content, including discrete surface waste resulting from uranium or thorium solution extraction processes. Underground ore bodies depleted by these solution extraction operations do not constitute byproduct material within this definition.

Florida Statute 404.031(14) "Radioactive waste" means any equipment or materials which are radioactive or have radioactive contamination and which are required pursuant to any governing laws, regulations, or licenses to be stored, treated, or disposed of as radioactive waste. The term "radioactive waste" is further defined as follows:

- (a) "High-level waste" means irradiated reactor fuel, liquid wastes from reprocessing irradiated reactor fuel, and solids into which such liquid wastes have been converted.
- (b) "Low-level waste" means radioactive waste not classified as high-level radioactive waste, transuranic waste, spent nuclear fuel, or byproduct material as defined in s. 11(e)(2) of the Atomic Energy Act of 1954.
- (c) "Transuranic waste" means waste material containing transuranic elements with contamination levels greater than 10 nanocuries per gram of waste.

Florida Statute 404.031(13) "Radioactive material" means any solid, liquid, or gas which emits ionizing radiation spontaneously; however, this definition does not include radioactive wastes regulated pursuant to the hazardous waste management sections of the federal Resource Conservation and Recovery Act of 1976 or the Department of Environmental Protection's assumption of that program.

Florida Statute 404.031(17) "Sources of radiation" means, collectively, radioactive material and radiation machines.

Florida Regulation 64E-5.101(87) "NARM" means any naturally occurring or accelerator-produced radioactive material. To meet the definition of licensing state, NARM only refers to discrete sources of NARM. Diffuse sources of NARM, which are large in volume and low in activity, are excluded from consideration by the Conference of Radiation Control Program Directors, Inc., for licensing state designation purposes.

Florida Regulation 64E-5.101(88) "Natural radioactivity" means radioactivity of naturally occurring nuclides.

Florida Regulation 64E-5.101(128) "Sanitary sewerage" means a system of public sewers for carrying off waste water and refuse, but excluding sewage treatment facilities, septic tanks, and leach fields owned or operated by the licensee or registrant.

Chapter 64E-5, Florida Administrative Code, is available at:  
<http://www.doh.state.fl.us/environment/radiation/regs/64e-5tab.htm>

Florida uses NRC guidance documents to determine whether radioactive materials can be released for unrestricted use. This includes but is not limited to NRC guidance documents such as Regulatory Guide 1.86 and computer models such as RESRAD, DandD and EPA's COMPLY. We evaluate the applicability of these models and their strengths and weaknesses on a case-by-case basis.

Florida's waste disposal regulations and standards are equivalent to NRC's 10 CFR Part 20 Subpart K – Waste Disposal. In addition, Florida has an expanded version of NRC's decay-in-storage option listed below.

**64E-5.331 Disposal of Specific Wastes.**

- (1) A licensee can dispose of the following licensed material without regard to its radioactivity:
  - (c) Any radioactive material which is not a sealed source with a physical half-life of less than 90 days if all of the following are met:
    1. Radioactive material to be disposed is held for decay in storage a minimum of 10 half-lives;
    2. The radioactive material is monitored at the container surface before disposal as ordinary trash and its radioactivity cannot be distinguished from the background radiation level in a low background radiation area with an appropriate radiation survey instrument set on its most sensitive scale and with no interposed shielding;
    3. All radiation labels are removed or obliterated, unless specifically authorized in writing or license condition by the department;
    4. Each generator column is separated and monitored individually with all radiation shielding removed to ensure that its contents have decayed to background levels before disposal; and
    5. The licensee shall retain a record of each disposal for 3 years. The record shall include:
      - a. The date of the disposal;
      - b. The date on which the radioactive material was placed in storage;
      - c. The radionuclides disposed;
      - d. The model and serial number of the radiation survey instrument used;
      - e. The background dose rate;
      - f. The radiation dose rate measured at the surface of each container; and
      - g. The name of the individual who performed the disposal.

Attachment C – Release of Solid Radioactive Materials

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1. Florida uses NRC guidance documents to determine whether radioactive materials can be released for unrestricted use. This includes but is not limited to NRC guidance documents such as Regulatory Guide 1.86 and computer models such as RESRAD, DandD and EPA's COMPLY, and the NUREG series to include NUREG 1506, 1506 and 1507. We evaluate the applicability of these models and their strengths and weaknesses on a case-by-case basis. We do not use NRC Regulatory Guide 1.86 for NORM waste.
2. Florida applies radiological criteria through licensing actions and regulations where appropriate.
3. We do not require a specific methodology. The methodology described in MARSSIM is acceptable. NRC also has methodology in NUREG/CR-5849 and NUREG-1505.
4. Instruments used are those with sufficient sensitivity to demonstrate compliance with the accepted release criteria.
5. Not applicable.
6. We do not have volumetric release authorizations.