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THE CLEVELAND ELECTRIC ILLUMINATING COMPANY
PERRY NUCLEAR POWER PLANT OPERATIONS MANUAL

TITLE: CONTROL OF RADIOACTIVE MATERIAL

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Control of Radioactive Material

PAP-0515

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SCOPE OF REVISION:

CONTROL OF RADIOACTIVE MATERIAL

1.0 PURPOSE

This procedure defines the radiological controls for procurement, receipt, handling, storage and release of non-effluent radioactive material at the Perry Nuclear Power Plant (PNPP).

2.0 SCOPE

This procedure applies to radioactive material pursuant to activities licensed by the USNRC. This procedure does not apply to the control of Special Nuclear Material.

3.0 RESPONSIBILITY

- 3.1 The Manager, Perry Plant Technical Department, and the Manager, Perry Plant Operations Department shall ensure that the requirements set forth in this procedure are followed by all PNPP personnel.
- 3.2 The Plant Health Physicist shall ensure that radioactive material covered by this procedure is procured, utilized, and unconditionally/ conditionally released in accordance with established plant procedures.
- 3.3 All plant personnel shall comply with the requirements set forth in this procedure.

4.0 REFERENCES

- 4.1 10CFR20, Standards for Protection Against Radiation.
- 4.2 10CFR30, Rules of General Applicability to Domestic Licensing of Byproduct Material.
- 4.3 10CFR33, Specific Domestic Licenses of Broad Scope for Byproduct Material.
- 4.4 USNRC Byproduct Material License No. 34-07043-05 issued to the Cleveland Electric Illuminating Company.

5.0 DEFINITIONS

5.1 Radioactive Material

Any such material whether or not subject to licensing control by the Nuclear Regulatory Commission which emits radiation spontaneously.

5.2 Byproduct Material

Any radioactive material (except Special Nuclear Material) yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing Special Nuclear Material.

5.3 Special Nuclear Material

1. Plutonium, uranium 233, uranium enriched in the isotope 233 or in the isotope 235, and any other material which the Nuclear Regulatory Commission ... determines to be special nuclear material, but does not include source material; or
2. Any material artificially enriched by any of the foregoing but does not include source material.

6.0 DETAILS

6.1 Procurement of Radioactive Material

- 6.1.1 Prior to initiating the purchase or transfer of radioactive material to PNPP, each individual shall initiate Attachment 1, Form: PAP-0515-1, Radioactive Materials Procurement Request.
- 6.1.2 The requestor shall complete Part I of Form: PAP-0515-1 and include the following information:
 1. Requestor's name and telephone extension number.
 2. A description of the radioactive material to be procured. Also include a description of any equipment that produces or emits radiation in the course of operation (i.e., - X-Ray machines, etc.).
 3. Identify each nuclide, its physical form (solid, liquid, or gaseous), and its activity in Curies.
 4. The estimated date of receipt.
 5. Requestor's signature and date of request.

- 6.1.3 When Part I is completed, submit the entire Form: PAP-0515-1 to the Plant Health Physicist (Plant HP).
- 6.1.4 The Plant HP shall review the request to ensure that the radioactive material identified in Part I of the form meets the requirements set forth in the Byproduct Material License (Reference 4.5).
- 6.1.5 The Plant HP shall complete Part II of Form: PAP-0515-1 and shall include the following information:
1. Approval or rejection of the request.
 2. Reason(s) for rejection.
 3. Plant HP signature and the date.
- 6.1.6 The Plant HP shall return the completed Form: PAP-0515-1 (original) to the Requestor and retain a copy for the Health Physics Unit file.

6.2 Receipt of Radioactive Material

- 6.2.1 Radioactive material can be identified by the standard three-bladed radiation symbol that will label the material and radioactive material should be identified on the shipping papers, bill of lading, etc.
- 6.2.2 The individual receiving a parcel known to contain radioactive material shall notify Health Physics as soon as possible but no later than one (1) hour during normal working hours or twelve (12) hours during off-normal hours.
- 6.2.3 If it is not known that a parcel contains radioactive material until it is unpacked, notify Health Physics immediately upon discovery that the parcel does contain radioactive material. Discontinue any further unpacking.
- 6.2.4 The individual receiving the parcel should move it to a secure area to prevent tampering with the parcel.

CAUTION

Do not attempt to move, unpack, or handle in any way parcels which appear damaged or water soaked. Notify Health Physics immediately and detain the parcel's delivering carrier. Keep the parcel under direct surveillance and ensure that it is not handled by other personnel.

- 6.2.5 Health Physics shall survey the parcel in accordance with HPI-HI, Receipt of Radioactive Materials.

6.3 Radioactive Material Identification

- 6.3.1 Each container of radioactive material shall bear a durable, clearly visible label or tag with the radiation caution symbol and the words "CAUTION, RADIOACTIVE MATERIAL" or "DANGER, RADIOACTIVE MATERIAL". The label shall provide sufficient information to permit individuals handling or using the container, or working in the vicinity thereof, to take precautions to avoid or minimize exposures.

- 6.3.2 The following do not require a label as described in Step 6.3.1:

1. Containers that do not contain licensed materials in quantities greater than the applicable quantities listed in Appendix C of 10CFR20.
2. Containers containing only natural uranium or thorium in quantities no greater than 10 times the applicable quantities listed in Appendix C of 10CFR20.
3. Containers that do not contain licensed materials in concentrations greater than the applicable concentrations listed in Appendix B, Table I, Column 2 of 10CFR20.
4. Containers when attended by an individual who takes the precautions necessary to prevent the exposure of any individual to radiation or radioactive materials in excess of PNPP exposure limits.
5. Containers when in transport and packaged and labeled in accordance with regulations of the Department of Transportation.
6. Containers in locations which are accessible only to individuals authorized to handle or use them, or to work in the vicinity thereof, provided that the contents are identified to such individuals by a readily available written record.
7. Manufacturing or process equipment, such as nuclear reactors, reactor components, piping, and tanks.

- 6.3.3 Within the PNPP Protected Area, all material that is YELLOW in color, identified with YELLOW MARKINGS, or contained within YELLOW material (such as bags, drums, etc.) shall be treated

as potentially contaminated. Company issued hard hats, rainwear (boots, raincoats), and flashlights and company vehicles are exceptions.

6.4 Radioactive Material Storage

- 6.4.1 Radioactive material should not be left unattended except in approved Radioactive Material Storage Areas as designated by the Plant HP.
- 6.4.2 Radioactive material storage areas shall be posted in accordance with PAP-0511, Radiological Controlled Areas.
- 6.4.3 Health Physics shall ensure that area postings remain valid as radioactive material is added to or removed from storage.
- 6.4.4 Radioactive material stored outside of the physical structure of the plant shall be protected from the environment to prevent any breach in the integrity of the container.

6.5 Handling of Radioactive Material

6.5.1 Personnel Requirements

- 1. When handling radioactive materials, personnel should:
 - a. Observe the radiation warning label or tag for precautions before handling or opening the materials container.
 - b. Be aware of the potential radiation and contamination hazards attributed to the radioactive material.
 - c. Use good judgement and sound Health Physics practices to minimize personnel exposures.
- 2. Handle or transfer radioactive material as directed by instructions of Health Physics personnel.

6.5.2 Contaminated Tools and Equipment

- 1. Contaminated tools and equipment shall be conspicuously marked as such.
- 2. Contaminated tools and equipment shall be used only in contaminated areas or in areas anticipated to become contaminated in the performance of planned work.
- 3. During transfer through uncontaminated areas, contaminated tools and equipment shall be contained in polybags, or equivalent, or in tool boxes conspicuously marked as containing contaminated tools.

4. Contaminated tools and equipment should be sealed in polybags, or equivalent, and labeled or tagged when left unattended.

NOTE: Tools and equipment left unattended in contaminated work areas for the duration of the job need not be bagged or labeled. When the job is completed, the contaminated tools and equipment should be removed from the area in accordance with this procedure.

5. Health Physics shall perform any necessary radiation and contamination surveys of contaminated tools and equipment.
6. Tools and equipment contaminated to levels greater than 10,000 dpm/100 cm² or 5 mR/hr shall be decontaminated prior to storage or their next use.
7. All wood should be painted or covered with plastic or equivalent before it is taken into a radiological controlled area. This will prevent or reduce contamination and ease decontamination of wood, thus reducing the volume of radwaste.

6.5.3 Radwaste

1. Radwaste receptacles shall be designated in accordance with PAP-1901, Dry Radioactive Waste Volume Reduction Program.
2. The receptacles shall be provided at specific locations as deemed necessary by Health Physics.

6.6 Release of Radioactive Materials

6.6.1 Unconditional Release

1. Tools, equipment, and materials may be unconditionally released from a Radiological Controlled Area provided that contamination levels are less than:

a. Removable Contamination

100 dpm/100 cm² alpha*
1000 dpm/100 cm² beta-gamma

b. Fixed Contamination

100 dpm alpha* (as measured with an AC-3-7 probe or
equivalent)
0.1 mR/hr beta-gamma

*When alpha contamination is suspected.

2. When a set of tools (i.e., tool box, tool bag, etc.) is to be released, all tools that were used, plus any other tools that may have become contaminated, shall be surveyed by Health Physics.

NOTE: Personal items, such as clipboards, pens, pencils, safety glasses, etc. may be surveyed by their user by using the same technique prescribed for frisking personnel.

6.6.2 Conditional Release

1. Tools, equipment, or material may be released to a contractor/vendor if:
 - a. The contractor/vendor holds a valid license to receive the radioactive material; or
 - b. The radioactive material is decontaminated to meet the unconditional release limits stated in Step 6.6.1,1 above.
2. If the tools, equipment, or material cannot or is not decontaminated for unconditional release, then it may be packaged and shipped per the contractor's/vendor's license requirements and in accordance with PAP-1304, Radioactive Shipment Criteria.

6.7 Records

- 6.7.1 Form: PAP-0515-1 shall be retained in accordance with PAP-1701, Plant Records Management.

7.0 ATTACHMENTS

- 7.1 Attachment 1 - Form: PAP-0515-1, Radioactive Materials Procurement Request.

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Attachment 1
Form: PAP-0515-1

Radioactive Materials Procurement Request

PART I: REQUEST

REQUESTOR'S

NAME (print): _____ EXT. NO. _____

DESCRIPTION OF RADIOACTIVE MATERIAL: _____

NUCLIDE	PHYSICAL FORM	ACTIVITY (in Curies)
SAMPLE		

ESTIMATED RECEIPT DATE: _____

REQUESTOR'S

SIGNATURE: _____

PART II: REVIEW/APPROVAL

REQUEST FOR PROCUREMENT OF RADIOACTIVE MATERIAL LISTED ABOVE IS:

APPROVED

REJECTED; REASON(S): _____

SIGNED: _____ DATE: _____

Plant Health Physicist

ORIGINAL - Return to REQUESTOR

COPY - Health Physics Unit FILE

CONVERSATION RECORD

TIME

12:50

DATE

5/14/85

TYPE

☐ VISIT

☐ CONFERENCE

☒ TELEPHONE

☐ INCOMING

☒ OUTGOING

ROUTING

NAME/SYMBOL

INT

Location of Visit/Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT
WITH YOU

ORGANIZATION (Office, dept., bureau,
etc.)

TELEPHONE NO.

216)
259-3237

X 3577

SUBJECT

Government Request

Control No. 78825

SUMMARY

I requested the following additional
info regarding the use of the
New England Nuclear gamma assembly:

1) Procedures for insuring that
radiation exposure to persons
handling the cesium-137 source
during instrument calibration is
A CARA.

2) Procedures for insuring that radiation
levels in unrestricted areas are in
accordance with 30.105.

3) Procedures for insuring that the source
and storage shield are secured from
unauthorized use or removal.

ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION

SIGNATURE

DATE

ACTION TAKEN *Required*

30 day response

SIGNATURE

TITLE

DATE

PGJ H-10

5/14/85