

UNITED STATES
NUCLEAR REGULATORY COMMISSION

In the Matter of)
)
LICENSEES AUTHORIZED TO POSSESS)
RADIOACTIVE MATERIAL)
QUANTITIES OF CONCERN)

EA-09-204

**ORDER IMPOSING INCREASED CONTROLS
(EFFECTIVE IMMEDIATELY)**

I

The Licensees identified in Attachment A to this Order hold licenses issued in accordance with the Atomic Energy Act of 1954 by the U.S. Nuclear Regulatory Commission (NRC or Commission) authorizing them to possess certain quantities of radioactive material of concern. Under NRC regulations, Licensees must take measures to ensure the security and control of such material. Among these regulations, 10 CFR § 20.1801 requires Licensees to secure from unauthorized removal or access licensed materials that are stored in controlled or unrestricted areas, while 10 CFR § 20.1802 requires Licensees to control and maintain constant surveillance of licensed material that is in a controlled or unrestricted area and that is not in storage.

II

Prior to the terrorist attacks of September 11, 2001 (9/11), several national and international efforts were underway to address the potentially significant health and safety hazards posed by uncontrolled sources. These efforts recognized the need for increased control of high-risk radioactive materials to prevent both inadvertent and intentional

unauthorized access, primarily due to the potential health and safety hazards posed by the uncontrolled material. Following 9/11, it was recognized that these efforts should also include a heightened awareness and focus on the need to prevent intentional unauthorized access due to potential malicious acts. These efforts, such as the International Atomic Energy Agency Code of Conduct on the Safety and Security of Radioactive Sources concerning Category 1 and 2 sources, sought to increase the control over sources in order to prevent both unintended radiation exposure and malicious acts.

A licensee's loss of control of high-risk radioactive sources, whether it be inadvertent or through a deliberate act, has the potential to result in significant adverse health impacts and could reasonably constitute a threat to the public health and safety. For this reason, the Commission has determined that Licensees must implement certain additional controls in order to ensure adequate protection of, and minimize danger to, public health and safety. These additional controls supplement existing requirements in the NRC's regulations, including the requirements in 10 CFR § 20.1801 and 10 CFR § 20.1802. The Commission is imposing the requirements set forth in Attachment C on decommissioning reactor licensees who possess, or who plan to acquire in the near future, radionuclides of concern at or above threshold limits identified in Table 1. These requirements will remain in effect until the Commission modifies its regulations to reflect increased controls.

The Commission recognizes that Licensees may have already initiated many controls set forth in Attachment C to this Order in response to previously issued advisories or on their own initiative. The Commission also recognizes that some controls may not be possible or necessary at some sites, and that certain controls may need to be tailored to accommodate the Licensees' specific circumstances, achieve the intended objectives, and avoid any unforeseen adverse effect on the safe use and storage of licensed material.

To provide assurance that the Licensees are implementing prudent measures to achieve a consistent level of control, all Licensees who hold licenses issued by the NRC authorizing possession of radioactive material quantities of concern, as listed in Table 1, “Radionuclides of Concern,” (Attachment B, Table 1), shall implement the requirements identified in Attachment C to this Order. In addition, pursuant to 10 CFR § 2.202, because of the potentially significant adverse health impacts associated with failure to control high risk radioactive sources, the NRC finds that the public health, safety, and interest require that this Order be effective immediately.

III

Accordingly, pursuant to Sections 81, 161b, 161i, 161o, 182 and 186 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations, including regulations in 10 CFR Parts 2, 20, 30, 33, 40 and 50, IT IS HEREBY ORDERED, **EFFECTIVE IMMEDIATELY**, THAT ALL LICENSEES IDENTIFIED IN ATTACHMENT A TO THIS ORDER SHALL COMPLY WITH THE REQUIREMENTS OF THIS ORDER AS FOLLOWS:

A. The Licensee shall comply with the requirements described in Attachment C to this Order. The Licensee shall complete implementation within ninety (90) days of the date of this Order, or the first day that radionuclides of concern at or above threshold limits, identified in Table 1, are possessed, whichever occurs later.

B. 1. The Licensee shall in writing, within **twenty five (25) days** of the date of this Order, notify the Commission, (1) if it is unable to comply with any of the requirements described in Attachment C, (2) if compliance with any of the requirements is unnecessary in its specific circumstances, or (3) if implementation of any of the requirements would cause the Licensee to be in violation of the provisions of any

Commission regulation or its license. The notification shall provide the Licensee's justification for seeking relief from or variation of any specific requirement.

B. 2. If the Licensee considers that implementation of any of the requirements described in Attachment C to this Order would adversely impact safe operation of the facility, the Licensee must notify the Commission, in writing, within **twenty five (25) days** of this Order, of the adverse safety impact, the basis for its determination that the requirement has an adverse safety impact, and either a proposal for achieving the same objectives specified in the Attachment C requirement in question, or a schedule for modifying the facility to address the adverse safety condition. If neither approach is appropriate, the Licensee must supplement its response to Condition B.1 of this Order to identify the condition as a requirement with which it cannot comply, with attendant justifications as required in Condition B.1.

C. 1. The Licensee shall, **within twenty five (25) days** of the date of this Order, submit to the Commission a schedule for completion of each requirement described in Attachment C.

C. 2. The Licensee shall report to the Commission when they have achieved full compliance with the requirements described in Attachment C.

D. Notwithstanding any provisions of the Commission's regulations to the contrary, all measures implemented or actions taken in response to this Order shall be maintained until the Commission modifies its regulations to reflect increased controls.

E. These requirements do not apply to radioactive material contained in spent nuclear fuel.

Licensee responses to Conditions B.1, B.2, C.1, and C.2 above shall be submitted to the Director, Division of Waste Management and Environmental Protection, Office of Federal and State Materials and Environmental Programs, U.S. Nuclear Regulatory Commission, Washington, DC 20555. In addition, Licensee's responses shall be marked as "Withhold From Public Disclosure Under 10 CFR 2.390."

The Director, Division of Waste Management and Environmental Protection, Office of Federal and State Materials and Environmental Programs, may, in writing, relax or rescind any of the above conditions upon demonstration by the Licensee of good cause.

IV.

In accordance with 10 CFR § 2.202, the Licensee must, and any other person adversely affected by this Order may, submit an answer to this Order, and may request a hearing on this Order, within **twenty five (25) days** of the date of this Order. If a person other than the Licensee requests a hearing, that person shall set forth with particularity the manner in which his interest is adversely affected by this Order and shall address the criteria set forth in 10 CFR § 2.309(d). Where good cause is shown, consideration will be given to extending the time to request a hearing. A request for extension of time in which to submit an answer must be made in writing to the Director, Division of Waste Management and Environmental Protection, Office of Federal and State Materials and Environmental Programs, U.S. Nuclear Regulatory Commission, Washington, DC 20555, and include a statement of good cause for the extension. The answer may consent to this Order. Unless the answer consents to this Order, the answer shall, in writing and under oath or affirmation, specifically set forth the matters of fact and law on

which the Licensee or other person adversely affected relies and the reasons as to why the Order should not have been issued. Any answer shall be submitted to the Secretary, Office of the Secretary of the Commission, U.S. Nuclear Regulatory Commission, ATTN: Rulemakings and Adjudications Staff, Washington, DC 20555. Copies also shall be sent to the Director, Division of Waste Management and Environmental Protection, Office of Federal and State Materials and Environmental Programs, U.S. Nuclear Regulatory Commission, Washington, DC 20555, to the Assistant General Counsel for Materials Litigation and Enforcement at the same address, and to the Licensee if the answer is by a person other than the Licensee. Because of possible disruptions in delivery of mail to United States Government offices, it is requested that answers be transmitted to the Secretary of the Commission either by means of facsimile transmission to 301-415-1101 and also to the Office of the General Counsel either by means of facsimile transmission to 301-415-3725 or by e-mail to OGCMailCenter@nrc.gov.

A request for a hearing must be filed in accordance with the NRC E-Filing rule, which became effective on October 15, 2007. The E-Filing Final Rule was issued on August 28, 2007, (72 Fed. Reg. 49,139). The E-Filing process requires participants to submit and serve documents over the internet or, in some cases, to mail copies on electronic optical storage media. Participants may not submit paper copies of their filings unless they seek a waiver in accordance with the procedures described below.

To comply with the procedural requirements associated with E-Filing, at least five (5) days prior to the filing deadline the requestor must contact the Office of the Secretary of the Commission by e-mail at hearingdocket@nrc.gov, or by calling (301) 415-1677, to request (1) a digital ID certificate, which allows the participant (or its counsel or representative) to digitally sign documents and access the E-Submittal server for any NRC proceeding in which it is participating; and/or (2) creation of an electronic docket for the proceeding (even in instances when the requestor (or its counsel or representative) already holds an NRC-issued digital ID

certificate). Each requestor will need to download the Workplace Forms Viewer™ to access the Electronic Information Exchange (EIE), a component of the E-Filing system. The Workplace Forms Viewer™ is free and is available at <http://www.nrc.gov/site-help/e-submittals/install-viewer.html>. Information about applying for a digital ID certificate also is available on NRC's public website at <http://www.nrc.gov/site-help/e-submittals/apply-certificates.html>.

Once a requestor has obtained a digital ID certificate, had a docket created, and downloaded the EIE viewer, it can then submit a request for a hearing through EIE. Submissions should be in Portable Document Format (PDF) in accordance with NRC guidance available on the NRC public website at <http://www.nrc.gov/site-help/e-submittals.html>. A filing is considered complete at the time the filer submits its document through EIE. To be timely, electronic filings must be submitted to the EIE system no later than 11:59 p.m. Eastern Time on the due date. Upon receipt of a transmission, the E-Filing system time-stamps the document and sends the submitter an e-mail notice confirming receipt of the document. The EIE system also distributes an e-mail notice that provides access to the document to the NRC Office of the General Counsel and any others who have advised the Office of the Secretary of the Commission that they wish to participate in the proceeding, so that the filer need not serve the document on those participants separately. Therefore, any others who wish to participate in the proceeding (or their counsel or representative) must apply for and receive a digital ID certificate before a hearing request is filed so that they may obtain access to the document via the E-Filing system.

A person filing electronically may seek assistance through the "Contact Us" link located on the NRC website at <http://www.nrc.gov/site-help/e-submittals.html> or by calling the NRC technical help line, which is available between 8:30 a.m. and 4:15 p.m., Eastern Time, Monday through Friday. The help line number is (800) 397-4209 or locally, (301) 415-4737.

Participants who believe that they have good cause for not submitting documents electronically must file a motion, in accordance with 10 C.F.R. 2.302(g), with their initial paper

filing requesting authorization to continue to submit documents in paper format. Such filings must be submitted by (1) first class mail addressed to the Office of the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Attention: Rulemaking and Adjudications Staff; or (2) courier, express mail, or expedited delivery service to the Office of the Secretary of the Commission, Sixteenth Floor, One White Flint North, 11555 Rockville Pike, Rockville, Maryland, 20852, Attention: Rulemaking and Adjudications Staff. Participants filing a document in this manner are responsible for serving the document on all other participants. Filing is considered complete by first-class mail as of the time of deposit in the mail, or by courier, express mail, or expedited delivery service upon depositing the document with the provider of the service.

If a hearing is requested by the Licensee or a person whose interest is adversely affected, the Commission will issue an Order designating the time and place of any hearing. If a hearing is held, the issue to be considered at such hearing shall be whether this Order should be sustained.

Pursuant to 10 CFR § 2.202(c)(2)(i), the Licensee may, in addition to demanding a hearing, at the time the answer is filed or sooner, move the presiding officer to set aside the immediate effectiveness of the Order on the ground that the Order, including the need for immediate effectiveness, is not based on adequate evidence but on mere suspicion, unfounded allegations, or error.

In the absence of any request for hearing, or written approval of an extension of time in which to request a hearing, the provisions specified in Section III above shall be final **twenty five (25) days** from the date of this Order without further order or proceedings. If an extension of time for requesting a hearing has been approved, the provisions specified in Section III shall be final when the extension expires if a hearing request has not been received. AN ANSWER

OR A REQUEST FOR HEARING SHALL NOT STAY THE IMMEDIATE EFFECTIVENESS OF THIS ORDER.

Dated this 23rd day of November 2009

FOR THE NUCLEAR REGULATORY COMMISSION

Larry W. Camper, Director */RA/*
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

ATTACHMENT A: INCREASED CONTROLS LICENSEE LIST

EA-09-204

Dresden 1

Exelon Generation Company, LLC

License No.: DPR-2

Docket No. : 050-00010

Fermi 1

Detroit Edison Company

License No.: DPR-9

Docket No. : 050-00016

GE BWR

General Electric Company

License No.: DPR-1

Docket No. : 050-00018

Humboldt 3

Pacific Gas and Electric Company

License No.: DPR-7

Docket No. : 050-00133

Indian Point-1

Entergy Nuclear Operations

License No.: DPR-5

Docket No. : 050-00003

Lacrosse

Dairyland Power Cooperative

License No.: DPR-45

Docket No. : 050-00409

Millstone 1

Dominion Nuclear Connecticut, Inc.

License No.: DPR-21

Docket No. : 050-00245

Nuclear Ship Savannah

U. S. Department of Transportation

License No.: NS-1

Docket No. : 050-00238

Peach Bottom 1

Exelon Nuclear

License No.: DPR-12

Docket No. : 050-00171

Rancho Seco

Sacramento Municipal Utility District

License No.: DPR-54

Docket No. : 050-00312

San Onofre 1

Southern California Edison

License No.: DPR-13

Docket No. : 050-00206

TMI 2

FirstEnergy Corporation

License No.: DPR-73

Docket No. : 050-00320

Zion 1 & 2

Exelon Generation Company, LLC

License No.: DPR-39 and DPR-48

Docket No. : 050-00295 and 050-00304

ATTACHMENT B

Table 1: Radionuclides of Concern

Radionuclide	Quantity of Concern ¹ (TBq)	Quantity of Concern ² (Ci)
Am-241	0.6	16
Am-241/Be	0.6	16
Cf-252	0.2	5.4
Cm-244	0.5	14
Co-60	0.3	8.1
Cs-137	1	27
Gd-153	10	270
Ir-192	0.8	22
Pm-147	400	11,000
Pu-238	0.6	16
Pu-239/Be	0.6	16
Ra-226	0.4	11
Se-75	2	54
Sr-90 (Y-90)	10	270
Tm-170	200	5,400
Yb-169	3	81
Combinations of radioactive materials listed above ³	See Footnote Below ⁴	

¹ The aggregate activity of multiple, collocated sources of the same radionuclide should be included when the total activity equals or exceeds the quantity of concern.

² The primary values used for compliance with this Order are TBq. The curie (Ci) values are rounded to two significant figures for informational purposes only.

³ Radioactive materials are to be considered aggregated or collocated if breaching a common physical security barrier (e.g., a locked door at the entrance to a storage room) would allow access to the radioactive material or devices containing the radioactive material.

⁴ If several radionuclides are aggregated, the sum of the ratios of the activity of each source, i of radionuclide, n , $A_{(i,n)}$, to the quantity of concern for radionuclide n , $Q_{(n)}$, listed for that radionuclide equals or exceeds one. $[(\text{aggregated source activity for radionuclide A}) \div (\text{quantity of concern for radionuclide A})] + [(\text{aggregated source activity for radionuclide B}) \div (\text{quantity of concern for radionuclide B})] + \text{etc.} \dots \geq 1$

ATTACHMENT C

INCREASED CONTROLS FOR LICENSEES THAT POSSESS SOURCES CONTAINING RADIOACTIVE MATERIAL QUANTITIES OF CONCERN

The purpose of the increased controls (IC) for radioactive sources is to enhance control of radioactive material in quantities greater than or equal to values described in Table 1, to reduce the risk of unauthorized use of radioactive materials, through access controls to aid prevention, and prompt detection, assessment, and response to mitigate potentially high consequences that would be detrimental to public health and safety. These increased controls for radioactive sources are established to delineate licensee responsibility to maintain control of licensed material and secure it from unauthorized removal or access. The following increased controls apply to licensees which, at any given time, possess radioactive sources greater than or equal to the quantities of concern of radioactive material defined in Table 1.

IC 1. In order to ensure the safe handling, use, and control of licensed material in use and in storage each licensee shall control access at all times to radioactive material quantities

of concern and devices containing such radioactive material (devices), and limit access to such radioactive material and devices to only approved individuals who require access to perform their duties.

- a. The licensee shall allow only trustworthy and reliable individuals, approved in writing by the licensee, to have unescorted access to radioactive material quantities of concern and devices. The licensee shall approve for unescorted access only those individuals with job duties that require access to such radioactive material and devices. Personnel who require access to such radioactive material and devices to perform a job duty, but who are not approved by the licensee for unescorted access, must be escorted by an approved individual.

- b. For individuals employed by the licensee for three years or less, and for non-licensee personnel, such as physicians, physicists, house-keeping personnel, and security personnel under contract, trustworthiness and reliability shall be determined, at a minimum, by verifying employment history, education, and personal references, and fingerprinting and the review of an FBI identification and criminal history records check. The licensee shall also, to the extent possible, obtain independent information to corroborate that provided by the employee (i.e., seeking references not supplied by the individual). For individuals employed by the licensee for longer than three years, trustworthiness and reliability shall be determined, at a minimum, by a review of the employees' employment history with the licensee and fingerprinting and an FBI identification and criminal history records check.

- c. All individuals requiring access to radioactive material quantities of concern or devices shall be escorted unless determined to be trustworthy and reliable by an NRC-required background investigation. In the case of a service provider's employee, the licensee shall obtain from the service provider written verification attesting to or certifying the employee's trustworthiness and reliability before granting unescorted access.
 - d. The licensee shall document the basis for concluding that there is reasonable assurance that an individual granted unescorted access is trustworthy and reliable, and does not constitute an unreasonable risk for unauthorized use of radioactive material quantities of concern. The licensee shall maintain a list of persons approved for unescorted access to such radioactive material and devices by the licensee.
- IC 2. In order to ensure the safe handling, use, and control of licensed material in use and in storage, each licensee shall have a documented program to monitor and immediately detect, assess, and respond to unauthorized access to radioactive material quantities of concern and devices. Enhanced monitoring shall be provided during periods of source delivery or shipment, where the delivery or shipment exceeds 100 times the Table 1 values.
- a. The licensee shall respond immediately to any actual or attempted theft, sabotage, or diversion of such radioactive material or of the devices. The response shall include requesting assistance from a Local Law Enforcement Agency (LLEA).

- b. The licensee shall have a pre-arranged plan with LLEA for assistance in response to an actual or attempted theft, sabotage, or diversion of such radioactive material or of the devices which is consistent in scope and timing with a realistic potential vulnerability of the sources containing such radioactive material. The pre-arranged plan shall be updated when changes to the facility design or operation affect the potential vulnerability of the sources. Pre-arranged LLEA coordination is not required for temporary job sites.
 - c. The licensee shall have a dependable means to transmit information between, and among, the various components used to detect and identify an unauthorized intrusion, to inform the assessor, and to summon the appropriate responder.
 - d. After initiating appropriate response to any actual or attempted theft, sabotage, or diversion of radioactive material or of the devices, the licensee shall, as promptly as possible, notify NRC Operations Center at (301) 816-5100.
 - e. The licensee shall maintain documentation describing each instance of unauthorized access and any necessary corrective actions to prevent future instances of unauthorized access.
- IC 3. a. In order to ensure the safe handling, use, and control of licensed material in transportation for domestic highway and rail shipments by a carrier other than the licensee, for quantities that equal or exceed those in Table 1 but are less than 100 times Table 1 quantities, per consignment, the licensee shall:
- 1. Use carriers which:

- A. Use package tracking systems,
- B. Implement methods to assure trustworthiness and reliability of drivers,
- C. Maintain constant control and/or surveillance during transit, and
- D. Have the capability for immediate communication to summon appropriate response or assistance.

The licensee shall verify and document that the carrier employ the measures listed above.

- 2. Contact the recipient to coordinate the expected arrival time of the shipment;
- 3. Confirm receipt of the shipment; and
- 4. Initiate an investigation to determine the location of the licensed material if the shipment does not arrive on or about the expected arrival time. When, through the course of the investigation, it is determined the shipment has become lost, stolen, or missing, the licensee shall immediately notify the NRC Operations Center at (301) 816-5100. If, after 24 hours of investigating, the location of the material still cannot be determined, the radioactive material shall be deemed missing and the licensee shall immediately notify the NRC Operations Center at (301) 816-5100.

- b. For domestic highway and rail shipments, prior to shipping licensed radioactive material that exceeds 100 times the quantities in Table 1 per consignment, the licensee shall:
1. Notify the NRC¹, in writing, at least 90 days prior to the anticipated date of shipment. The NRC will issue the Order to implement the Additional Security Measures (ASMs) for the transportation of Radioactive Material Quantities of Concern (RAM QC). The licensee shall not ship this material until the ASMs for the transportation of RAM QC are implemented or the licensee is notified otherwise, in writing, by NRC.
 2. Once the licensee has implemented the ASMs for the transportation of RAM QC, the notification requirements of 3.b.1 shall not apply to future shipments of licensed radioactive material that exceeds 100 times the Table 1 quantities. The licensee shall implement the ASMs for the transportation of RAM QC.

¹Director, Division of Waste Management and Environmental Protection

Office of Federal and State Materials and Environmental Programs

U.S. Nuclear Regulatory Commission

Washington, DC 20555

- c. If a licensee employs an M&D licensee to take possession at the licensee's location of the licensed radioactive material and ship it under its M&D license, the requirements of 3.a. and 3.b above shall not apply.

- d. If the licensee is to receive radioactive material greater than or equal to the Table 1 quantities, per consignment, the licensee shall coordinate with the originator to:
 - 1. Establish an expected time of delivery; and
 - 2. Confirm receipt of transferred radioactive material. If the material is not received at the expected time of delivery, notify the originator and assist in any investigation.

IC 4. In order to ensure the safe handling, use, and control of licensed material in use and in storage each licensee that possesses mobile or portable devices containing radioactive material in quantities greater than or equal to Table 1 values, shall:

- a. For portable devices, have two independent physical controls that form tangible barriers to secure the material from unauthorized removal when the device is not under direct control and constant surveillance by the licensee.

- b. For mobile devices:
 - 1. that are only moved outside of the facility (e.g., on a trailer), have two independent physical controls that form tangible barriers to secure the material from unauthorized removal when the device is not under direct control and constant surveillance by the licensee.

2. that are only moved inside a facility, have a physical control that forms a tangible barrier to secure the material from unauthorized movement or removal when the device is not under direct control and constant surveillance by the licensee.
 - c. For devices in or on a vehicle or trailer, licensees shall also utilize a method to disable the vehicle or trailer when not under direct control and constant surveillance by the licensee
- IC 5. The licensee shall retain documentation required by these increased controls for three years after they are no longer effective:
- a. The licensee shall retain documentation regarding the trustworthiness and reliability of individual employees for three years after the individual's employment ends.
 - b. Each time the licensee revises the list of approved persons required by 1.d., or the documented program required by 2, the licensee shall retain the previous documentation for three years after the revision.
 - c. The licensee shall retain documentation on each radioactive material carrier for three years after the licensee discontinues use of that particular carrier.

- d. The licensee shall retain documentation on shipment coordination, notifications, and investigations for three years after the shipment or investigation is completed.
- e. After the license is terminated or amended to reduce possession limits below the quantities of concern, the licensee shall retain all documentation required by these increased controls for three years.

IC 6. Detailed information generated by the licensee that describes the physical protection of radioactive material quantities of concern, is sensitive information and shall be protected from unauthorized disclosure.

- a. The licensee shall control access to its physical protection information to those persons who have an established need to know the information, and are considered to be trustworthy and reliable.
- b. The licensee shall develop, maintain and implement policies and procedures for controlling access to, and for proper handling and protection against unauthorized disclosure of, its physical protection information for radioactive material covered by these requirements. The policies and procedures shall include the following:
 - 1. General performance requirement that each person who produces, receives, or acquires the licensee's sensitive information, protect the information from unauthorized disclosure,

2. Protection of sensitive information during use, storage, and transit,
3. Preparation, identification or marking, and transmission,
4. Access controls,
5. Destruction of documents,
6. Use of automatic data processing systems, and
7. Removal from the licensee's sensitive information category.