

WSR 22-11-063

PERMANENT RULES

DEPARTMENT OF HEALTH

[Filed May 16, 2022, 12:06 p.m., effective June 16, 2022]

Effective Date of Rule: Thirty-one days after filing.

Purpose: Chapter 246-231 WAC, Packaging and transportation of radioactive material; chapter 246-236 WAC, Licenses and radiation safety requirements for irradiators; chapter 246-237 WAC, Radiation protection—Physical protection of category 1 and category 2 quantities of radioactive material; chapter 246-243 WAC, Radiation protection—Industrial radiography; and chapter 246-244 WAC, Radiation protection—Wireline services. Under the formal agreement between Washington and the United States Nuclear Regulatory Commission (NRC), the department of health (department) is required to remain compatible with NRC rules. This is done through rule amendments to make our state rules consistent with, and at-least-as-stringent-as, the NRC's rules. The adopted rule making amended five chapters of rules to adopt NRCs federally required rule changes without material change related to licensing radioactive materials. The department also made other nonsubstantive editorial and formatting changes.

Citation of Rules Affected by this Order: Amending WAC

246-231-060, 246-231-140, 246-231-150, 246-236-055, 246-237-010, 246-237-023, 246-237-027, 246-237-043, 246-237-077, 246-243-150, and 246-244-160.

Statutory Authority for Adoption: RCW 70A.388.040.

Other Authority: RCW 70A.388.110.

Adopted under notice filed as WSR 22-06-045 on February 24, 2022.

Number of Sections Adopted in Order to Comply with Federal Statute: New 0, Amended 0, Repealed 0; Federal Rules or Standards: New 0, Amended 11, Repealed 0; or Recently Enacted State Statutes: New 0, Amended 0, Repealed 0.

Number of Sections Adopted at the Request of a Nongovernmental Entity: New 0, Amended 0, Repealed 0.

Number of Sections Adopted on the Agency's own Initiative: New 0, Amended 0, Repealed 0.

Number of Sections Adopted in Order to Clarify, Streamline, or Reform Agency Procedures: New 0, Amended 0, Repealed 0.

Number of Sections Adopted using Negotiated Rule Making: New 0, Amended 0, Repealed 0; Pilot Rule Making: New 0, Amended 0, Repealed 0; or Other Alternative Rule Making: New 0, Amended 11, Repealed 0.

Date Adopted: May 16, 2022.

Lauren Jenks
Assistant Secretary

OTS-3485.2

AMENDATORY SECTION (Amending WSR 17-01-034, filed 12/12/16, effective 1/12/17)

WAC 246-231-060 General license—NRC-approved package. (1) A general license is hereby issued to any licensee of the department,

NRC, or an agreement state, to transport, or to deliver to a carrier for transport, licensed material in a package for which a license, certificate of compliance, or other approval has been issued by the NRC.

(2) This general license applies only to a licensee who has a quality assurance program approved by NRC as satisfying the provisions of 10 C.F.R. 71 Subpart H.

(3) Each licensee issued a general license under this chapter shall:

(a) Maintain a copy of the certificate of compliance, or other approval of the package, and the drawings and other documents referenced in the approval relating to the use and maintenance of the packaging and to the actions to be taken before shipment;

(b) Comply with the terms and conditions of the license, certificate, or other approval, as applicable, and the applicable requirements of 10 C.F.R. 71 Subparts A, G, and H; and

(c) Before the licensee's first use of the package, submits in writing to: ~~ATTN: Document Control Desk, Director, Division of (Spent Fuel Storage and Transportation)~~ Fuel Management, Office of Nuclear Material Safety and Safeguards, using an appropriate method listed in 10 C.F.R. 71.1(a), the licensee's name and license number and the package identification number specified in the package approval.

(4) This general license applies only when the package approval authorizes use of the package under this general license.

(5) For a Type B or fissile material package, the design of which was approved by NRC before April 1, 1996, the general license is subject to the additional restrictions of 10 C.F.R. 71.19.

[Statutory Authority: RCW 70.98.050 and 70.98.110. WSR 17-01-034, § 246-231-060, filed 12/12/16, effective 1/12/17. Statutory Authority: RCW 70.98.050. WSR 14-09-017, § 246-231-060, filed 4/7/14, effective 5/8/14; WSR 08-09-093, § 246-231-060, filed 4/18/08, effective 5/19/08; WSR 99-15-105, § 246-231-060, filed 7/21/99, effective 8/21/99.]

AMENDATORY SECTION (Amending WSR 17-01-034, filed 12/12/16, effective 1/12/17)

WAC 246-231-140 Advance notification of shipment of irradiated reactor fuel and nuclear waste. (1) (a) As specified in subsections (2), (3), and (4) of this section, each licensee shall provide advance notification to the governor of a state, or the governor's designee, of the shipment of licensed material, within or across the boundary of the state, before the transport, or delivery to a carrier, for transport, of licensed material outside the confines of the licensee's plant or other place of use or storage.

(b) As specified in subsections (2), (3), and (4) of this section, after June 11, 2013, each licensee shall provide advance notification to the Tribal official of participating tribes referenced in subsection (3) (c) (iii) of this section, or the official's designee, of the shipment of licensed material within or across the boundary of the Tribe's reservation before the transport, or delivery to a carrier for transport, of licensed material outside the confines of the licensee's plant or other place of use or storage.

(2) Advance notification is required under this section for shipments of irradiated reactor fuel in quantities less than that subject to advance notification requirements of NRC regulations 10 C.F.R. 73.37(f). Advance notification is also required under this section for shipment of licensed material, other than irradiated fuel, meeting the following three conditions:

(a) The licensed material is required by this section to be in Type B packaging for transportation;

(b) The licensed material is being transported to or across a state boundary en route to a disposal facility or to a collection point for transport to a disposal facility; and

(c) The quantity of licensed material in a single package exceeds the least of the following:

(i) ~~((3000))~~ Three thousand times the A1 value of the radionuclides as specified in WAC 246-231-200, Table A-1 for special form radioactive material;

(ii) ~~((3000))~~ Three thousand times the A2 value of the radionuclides as specified in WAC 246-231-200, Table A-1 for normal form radioactive material; or

(iii) ~~((1000))~~ One thousand TBq (27,000 Ci).

(3) Procedures for submitting advance notification.

(a) The notification must be made in writing to the office of each appropriate governor or governor's designee, to the office of each appropriate Tribal official or Tribal official's designee, and to the Director, ~~((Division of Security Policy,))~~ Office of Nuclear Security and Incident Response.

(b) A notification delivered by mail must be postmarked at least seven days before the beginning of the seven-day period during which departure of the shipment is estimated to occur.

(c) A notification delivered by any other means than mail must reach the office of the governor or the governor's designee, or of the Tribal official or the Tribal official's designee, at least four days before the beginning of the seven-day period during which departure of the shipment is estimated to occur.

(i) A list of the names and mailing addresses of the governors' designees receiving advance notification of transportation of nuclear waste was published in the *Federal Register* on June 30, 1995, (60 FR 34306).

(ii) Contact information for each state, including telephone and mailing addresses of governors and governors' designees, and participating Tribes, including telephone and mailing addresses of Tribal officials and Tribal official's designees, is available on the NRC website at ~~((+))~~ <https://scp.nrc.gov/special/designee.pdf>.

(iii) A list of the names and mailing addresses of the governors' designees and Tribal officials' designees of participating Tribes is available on request from the Director, Division of ~~((Intergovernmental Liaison and Rulemaking, Office of Federal and State Materials and Environmental Management Programs, NRC))~~ Materials Safety, Security, State, and Tribal Programs, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001.

(d) The licensee shall retain a copy of the notification as a record for three years.

(4) Information to be furnished in advance notification of shipment. Each advance notification of shipment of irradiated reactor fuel or nuclear waste must contain the following information:

- (a) The name, address, and telephone number of the shipper, carrier, and receiver of the irradiated reactor fuel or nuclear waste shipment;
- (b) A description of the irradiated reactor fuel or nuclear waste contained in the shipment, as specified in the regulations of DOT in 49 C.F.R. 172.202 and 172.203(d);
- (c) The point of origin of the shipment and the seven-day period during which departure of the shipment is estimated to occur;
- (d) The seven-day period during which arrival of the shipment at state boundaries or Tribal reservation boundaries is estimated to occur;
- (e) The destination of the shipment, and the seven-day period during which arrival of the shipment is estimated to occur; and
- (f) A point of contact, with a telephone number, for current shipment information.
- (5) Revision notice. A licensee who finds that schedule information previously furnished to a governor or governor's designee, or a Tribal official or Tribal official's designee, in accordance with this section, will not be met, shall telephone a responsible individual in the office of the governor of the state or of the governor's designee or the Tribal official or the Tribal official's designee, and inform that individual of the extent of the delay beyond the schedule originally reported. The licensee shall maintain a record of the name of the individual contacted for three years.

(6) Cancellation notice.

(a) Each licensee who cancels an irradiated reactor fuel or nuclear waste shipment for which advance notification has been sent shall send a cancellation notice to the governor of each state or to the governor's designee previously notified, to each Tribal official or to the Tribal official's designee previously notified, and to the Director, (~~Division of Security Policy,~~) Office of Nuclear Security and Incident Response.

(b) The licensee shall state in the notice that it is a cancellation and identify the advance notification that is being canceled. The licensee shall retain a copy of the notice as a record for three years.

[Statutory Authority: RCW 70.98.050 and 70.98.110. WSR 17-01-034, § 246-231-140, filed 12/12/16, effective 1/12/17. Statutory Authority: RCW 70.98.050. WSR 14-09-017, § 246-231-140, filed 4/7/14, effective 5/8/14; WSR 08-09-093, § 246-231-140, filed 4/18/08, effective 5/19/08; WSR 99-15-105, § 246-231-140, filed 7/21/99, effective 8/21/99.]

AMENDATORY SECTION (Amending WSR 17-01-034, filed 12/12/16, effective 1/12/17)

WAC 246-231-150 Quality assurance requirements. (1) Purpose. This section describes quality assurance requirements that apply to design, purchase, fabrication, handling, shipping, storing, cleaning, assembly, inspection, testing, operation, maintenance, repair, and modification of components of packaging that are important to safety. As used in this chapter, "quality assurance" comprises all those planned and systematic actions necessary to provide adequate confidence that a system or component will perform satisfactorily in service.

Quality assurance includes quality control, which comprises those quality assurance actions related to control of the physical characteristics and quality of the material or component to predetermined requirements. Each licensee and applicant for a package approval is responsible for satisfying the quality assurance requirements that apply to design, fabrication, testing, and modification of packaging subject to this chapter. Each licensee is responsible for satisfying the quality assurance requirements that apply to its use of packaging for the shipment of licensed material subject to this chapter.

(2) Establishment of program. Each licensee, certificate holder, and applicant for a certificate of compliance shall establish, maintain, and execute a quality assurance program satisfying each of the applicable criteria in 10 C.F.R. 71.101 through 71.137 and satisfying any specific provisions that are applicable to the licensee's activities including procurement of packaging. The licensee, certificate holder, and applicant for a certificate of compliance shall execute the applicable criteria in a graded approach to an extent that is commensurate with the quality assurance requirement's importance to safety.

(3) Approval of program. Before the use of any package for the shipment of licensed material subject to this chapter, each licensee shall obtain ((NRC)) the department's approval of its quality assurance program. Using an appropriate method listed in 10 C.F.R. 71.1(a), each licensee shall file a description of its quality assurance program, including a discussion of which requirements of 10 C.F.R. 71 Subpart H are applicable and how they will be satisfied, by submitting the description to ((~~ATTN: Document Control Desk, Director, Division of Spent Fuel Management, Office of Nuclear Material Safety and Safeguards~~)) the department.

(4) Radiography containers. A program for transport container inspection and maintenance limited to radiographic exposure devices, source changers, or packages transporting these devices and meeting the requirements of WAC 246-243-120(2), 10 C.F.R. 34.31(b), or equivalent agreement state requirements, is deemed to satisfy the requirements of WAC 246-231-060(2) and 246-231-150(2).

[Statutory Authority: RCW 70.98.050 and 70.98.110. WSR 17-01-034, § 246-231-150, filed 12/12/16, effective 1/12/17. Statutory Authority: RCW 70.98.050. WSR 14-09-017, § 246-231-150, filed 4/7/14, effective 5/8/14; WSR 08-09-093, § 246-231-150, filed 4/18/08, effective 5/19/08.]

OTS-3486.2

AMENDATORY SECTION (Amending WSR 18-15-017, filed 7/9/18, effective 8/9/18)

WAC 246-236-055 Personnel monitoring. (1) Irradiator operators shall wear a personnel dosimeter ((~~that is processed and evaluated by an accredited national voluntary laboratory accreditation program processor~~)) while operating a panoramic or beam-type irradiator or while in the area around the pool of an underwater irradiator. The personnel dosimeter ((~~processor must be accredited for~~)) must be capable of de-

tecting high energy photons in the normal and accident dose ranges per WAC 246-221-090(3). Each personnel dosimeter must be assigned to and worn by only one individual. Film badges must be (~~processed~~) replaced at least monthly(~~7~~) and other personnel dosimeters that require replacement must be (~~processed~~) evaluated at least quarterly or promptly after replacement, whichever is more frequent.

(2) Other individuals who enter the radiation room of a panoramic or beam-type irradiator shall wear a dosimeter, which may be a pocket dosimeter. For groups of visitors, only two people who enter the radiation room are required to wear dosimeters. If pocket dosimeters are used to meet the requirements of this subsection, a check of their response to radiation must be done at least annually. Acceptable dosimeters must read within plus or minus (~~thirty~~) 30 percent of the true radiation dose.

[Statutory Authority: RCW 70.98.050, 70.98.110 and 58 F.R. 7728, 76 F.R. 56963, 77 F.R. 39906, 80 F.R. 54234. WSR 18-15-017, § 246-236-055, filed 7/9/18, effective 8/9/18.]

OTS-3487.4

AMENDATORY SECTION (Amending WSR 16-13-079, filed 6/14/16, effective 7/15/16)

WAC 246-237-010 Definitions, abbreviations, and acronyms. The definitions, abbreviations, and acronyms in this section and in WAC 246-220-010 apply throughout this chapter unless the context clearly indicates otherwise:

(1) "Access control" means a system for allowing only approved individuals to have unescorted access to the security zone and for ensuring that all other individuals are subject to escorted access.

(2) "Act" means the Atomic Energy Act of 1954, including any amendments thereto.

(3) "Aggregated" means accessible by the breach of a single physical barrier that would allow access to radioactive material in any form, including any devices that contain the radioactive material, when the total activity equals or exceeds a Category 2 quantity of radioactive material.

(4) "Agreement state" means any state with which the Atomic Energy Commission or the NRC has entered into an effective agreement under subsection 274b of the act. Nonagreement state means any other state.

(5) "Approved individual" means an individual whom the licensee has determined to be trustworthy and reliable for unescorted access in accordance with WAC 246-237-021 through 246-237-033 and who has completed the training required by WAC 246-237-043(3).

(6) "Background investigation" means the investigation conducted by a licensee or applicant to support the determination of trustworthiness and reliability.

(7) "Becquerel (Bq)" means the SI unit of activity. One becquerel is equal to 1 disintegration or transformation per second (s^{-1}).

(8) "By-product material" means:

(a) Any radioactive material (except special nuclear material) yielded in, or made radioactive by, exposure to the radiation incident to the process of producing or using special nuclear material;

(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 wastes resulting from uranium solution extraction processes. Underground ore bodies depleted by these solution extraction operations do not constitute "by-product material" within this definition;

(c) (i) Any discrete source of radium-226 that is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity; or

(ii) Any material that:

(A) Has been made radioactive by use of a particle accelerator; and

(B) Is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity; and

(d) Any discrete source of naturally occurring radioactive material, other than source material, that:

(i) The NRC, in consultation with the Administrator of the Environmental Protection Agency, the Secretary of Energy, the Secretary of Homeland Security, and the head of any other appropriate federal agency, determines would pose a threat similar to the threat posed by a discrete source of radium-226 to the public health and safety or the common defense and security; and

(ii) Before, on, or after August 8, 2005, is extracted or converted after extraction for use in a commercial, medical, or research activity.

(9) "Carrier" means a person engaged in the transportation of passengers or property by land or water as a common, contract, or private carrier, or by civil aircraft.

(10) "Category 1 quantity of radioactive material" means a quantity of radioactive material meeting or exceeding the Category 1 threshold in Table 1 of WAC 246-237-900 Appendix A: Table 1—Category 1 and Category 2. This is determined by calculating the ratio of the total activity of each radionuclide to the Category 1 threshold for that radionuclide and adding the ratios together. If the sum equals or exceeds 1, the quantity would be considered a Category 1 quantity. Category 1 quantities of radioactive material do not include the radioactive material contained in any fuel assembly, subassembly, fuel rod, or fuel pellet.

(11) "Category 2 quantity of radioactive material" means a quantity of radioactive material meeting or exceeding the Category 2 threshold but less than the Category 1 threshold in Table 1 of WAC 246-237-900 Appendix A: Table 1—Category 1 and Category 2. This is determined by calculating the ratio of the total activity of each radionuclide to the Category 2 threshold for that radionuclide and adding the ratios together. If the sum equals or exceeds (\pm) one, the quantity would be considered a Category 2 quantity. Category 2 quantities of radioactive material do not include the radioactive material contained in any fuel assembly, subassembly, fuel rod, or fuel pellet.

(12) "Curie" means a unit of quantity of radioactivity. One curie (Ci) is that quantity of radioactive material which decays at the rate of 3.7×10^{10} transformations per second (tps).

(13) "Diversion" means the unauthorized movement of radioactive material subject to this chapter to a location different from the material's authorized destination inside or outside of the site at which the material is used or stored.

(14) "Escorted access" means accompaniment while in a security zone by an approved individual who maintains continuous direct visual surveillance at all times over an individual who is not approved for unescorted access.

(15) "FBI" means the federal bureau of investigation.

(16) "Fingerprint orders" means the orders issued by the NRC or the legally binding requirements issued by agreement states that require fingerprints and criminal history records checks for individuals with unescorted access to Category 1 and Category 2 quantities of radioactive material or safeguards information-modified handling.

(17) "Government agency" means any executive department, commission, independent establishment, corporation, wholly or partly owned by the United States of America which is an instrumentality of the United States, or any board, bureau, division, service, office, officer, authority, administration, or other establishment in the executive branch of the government.

(18) "License" means, except where otherwise specified, a license for radioactive material issued pursuant to the regulations in chapters 246-232, 246-233, 246-235, 246-240, 246-243, or 246-244 WAC.

(19) "License issuing authority" means the licensing agency (the department, NRC, or an agreement state) that issued the license.

(20) "LLEA (local law enforcement agency)" means a public or private organization that has been approved by a federal, state, or local government to carry firearms and make arrests, and is authorized and has the capability to provide an armed response in the jurisdiction where the licensed Category 1 or Category 2 quantity of radioactive material is used, stored, or transported.

(21) "Lost or missing licensed material" means licensed material whose location is unknown. It includes material that has been shipped but has not reached its destination and whose location cannot be readily traced in the transportation system.

(22) "Mobile device" means a piece of equipment containing licensed radioactive material that is either mounted on wheels or casters, or otherwise equipped for moving without a need for disassembly or dismounting; or designed to be hand carried. Mobile devices do not include stationary equipment installed in a fixed location.

(23) "Movement control center" means an operations center that is remote from transport activity and that maintains position information on the movement of radioactive material, receives reports of attempted attacks or thefts, provides a means for reporting these and other problems to appropriate agencies, and can request and coordinate appropriate aid.

(24) "No-later-than arrival time" means the date and time that the shipping licensee and receiving licensee have established as the time at which an investigation will be initiated if the shipment has not arrived at the receiving facility. The no-later-than arrival time may not be more than six hours after the estimated arrival time for shipments of Category 2 quantities of radioactive material.

(25) "NRC or commission" means the U.S. Nuclear Regulatory Commission.

(26) "Person" means any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, government agency other than NRC or the Department of Energy,

any state or any political subdivision of, or any political entity within, a state, any foreign government or nation, or any political subdivision of any such government or nation, or other entity, and any legal successor, representative, agent or agency of the foregoing.

(27) "Reviewing official" means the individual who makes the trustworthiness and reliability determination of an individual to determine whether the individual may have, or continue to have, unescorted access to the Category 1 or Category 2 quantities of radioactive materials that are possessed by the licensee.

(28) "Sabotage" means deliberate damage, with malevolent intent, to a Category 1 or Category 2 quantity of radioactive material, a device that contains a Category 1 or Category 2 quantity of radioactive material, or the components of the security system.

(29) "Safe haven" means a readily recognizable and readily accessible site at which security is present or from which, in the event of an emergency, the transport crew can notify and wait for the local law enforcement authorities.

(30) "Security zone" means any temporary or permanent area determined and established by the licensee for the physical protection of Category 1 or Category 2 quantities of radioactive material.

(31) "State" means a state of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands.

(32) "Telemetric position monitoring system" means a data transfer system that captures information by instrumentation or measuring devices about the location and status of a transport vehicle or package between the departure and destination locations.

(33) "Trustworthiness and reliability" are characteristics of an individual considered dependable in judgment, character, and performance, such that unescorted access to Category 1 or Category 2 quantities of radioactive material by that individual does not constitute an unreasonable risk to the public health and safety or security. A determination of trustworthiness and reliability for this purpose is based upon the results from a background investigation.

(34) "Unescorted access" means solitary access to an aggregated Category 1 or Category 2 quantity of radioactive material or the devices that contain the material.

(35) "United States" means when used in a geographical sense includes Puerto Rico and all territories and possessions of the United States.

[Statutory Authority: RCW 70.98.050 and 70.98.110. WSR 16-13-079, § 246-237-010, filed 6/14/16, effective 7/15/16.]

AMENDATORY SECTION (Amending WSR 17-01-034, filed 12/12/16, effective 1/12/17)

WAC 246-237-023 Access authorization program requirements. (1) Granting unescorted access authorization.

(a) Licensees shall implement the requirements of this chapter for granting initial or reinstated unescorted access authorization.

(b) Individuals who have been determined to be trustworthy and reliable shall also complete the security training required by WAC 246-237-043(3) before being allowed unescorted access to Category 1 or Category 2 quantities of radioactive material.

(2) Reviewing officials. Reviewing officials are the only individuals who may make trustworthiness and reliability determinations that allow individuals to have unescorted access to Category 1 or Category 2 quantities of radioactive materials possessed by the licensee.

(a) Each licensee shall name one or more individuals to be reviewing officials. After completing the background investigation on the reviewing official, the licensee shall provide, under oath or affirmation, a certification that the reviewing official is deemed trustworthy and reliable by the licensee. Provide oath or affirmation certificates to the department. The fingerprints of the named reviewing official must be taken by a law enforcement agency, federal or state agencies that provide fingerprinting services to the public, or commercial fingerprinting services authorized by a state to take fingerprints. The licensee shall recertify that the reviewing official is deemed trustworthy and reliable every (~~ten~~) 10 years in accordance with WAC 246-237-025(3).

(b) Reviewing officials must be permitted to have unescorted access to Category 1 or Category 2 quantities of radioactive materials or access to safeguards information or safeguards information-modified handling, if the licensee possesses safeguards information or safeguards information-modified handling.

(c) Reviewing officials cannot approve other individuals to act as reviewing officials.

(d) A reviewing official does not need to undergo a new background investigation before being named by the licensee as the reviewing official if:

(i) The individual has undergone a background investigation that included fingerprinting and an FBI criminal history records check and has been determined to be trustworthy and reliable by the licensee; or

(ii) The individual is subject to a category listed in WAC 246-237-029(1).

(3) Informed consent.

(a) Licensees may not initiate a background investigation without the informed and signed consent of the subject individual. This consent must include authorization to share personal information with other individuals or organizations as necessary to complete the background investigation. Before a final adverse determination, the licensee shall provide the individual with an opportunity to correct any inaccurate or incomplete information that is developed during the background investigation. Licensees do not need to obtain signed consent from those individuals who meet the requirements of WAC 246-237-025(2). A signed consent must be obtained prior to any reinvestigation.

(b) The subject individual may withdraw their consent at any time. Licensees shall inform the individual that:

(i) If an individual withdraws their consent, the licensee may not initiate any elements of the background investigation that were not in progress at the time the individual withdrew their consent; and

(ii) The withdrawal of consent for the background investigation is sufficient cause for denial or termination of unescorted access authorization.

(4) Personal history disclosure. Any individual who is applying for unescorted access authorization shall disclose the personal history information that is required by the licensee's access authorization program for the reviewing official to make a determination of the individual's trustworthiness and reliability. Refusal to provide, or the falsification of, any personal history information required by this

chapter is sufficient cause for denial or termination of unescorted access.

(5) Determination basis.

(a) The reviewing official shall determine whether to permit, deny, unfavorably terminate, maintain, or administratively withdraw an individual's unescorted access authorization based on an evaluation of all of the information collected to meet the requirements of this chapter.

(b) The reviewing official may not permit any individual to have unescorted access until the reviewing official has evaluated all of the information collected to meet the requirements of this chapter and determined that the individual is trustworthy and reliable. The reviewing official may deny unescorted access to any individual based on information obtained at any time during the background investigation.

(c) The licensee shall document the basis for concluding whether or not there is reasonable assurance that an individual is trustworthy and reliable.

(d) The reviewing official may terminate or administratively withdraw an individual's unescorted access authorization based on information obtained after the background investigation has been completed and the individual granted unescorted access authorization.

(e) Licensees shall maintain a list of persons currently approved for unescorted access authorization. When a licensee determines that a person no longer requires unescorted access or meets the access authorization requirement, the licensee shall remove the person from the approved list as soon as possible, but no later than seven working days, and take prompt measures to ensure that the individual is unable to have unescorted access to the material.

(6) Procedures. Licensees shall develop, implement, and maintain written procedures for implementing the access authorization program. The procedures must include provisions for the notification of individuals who are denied unescorted access. The procedures must include provisions for the review, at the request of the affected individual, of a denial or termination of unescorted access authorization. The procedures must contain a provision to ensure that the individual is informed of the grounds for the denial or termination of unescorted access authorization and allow the individual an opportunity to provide additional relevant information.

(7) Right to correct and complete information.

(a) Prior to any final adverse determination, licensees shall provide each individual subject to this chapter with the right to complete, correct, and explain information obtained as a result of the licensee's background investigation. Confirmation of receipt by the individual of this notification must be maintained by the licensee for a period of one year from the date of the notification.

(b) If, after reviewing their criminal history record, an individual believes that it is incorrect or incomplete in any respect and wishes to change, correct, update, or explain anything in the record, the individual may initiate challenge procedures. These procedures include direct application by the individual challenging the record to the law enforcement agency that contributed the questioned information or a direct challenge as to the accuracy or completeness of any entry on the criminal history record to the FBI, Criminal Justice Information Services Division, ATTN: SCU, Mod. D-2, 1000 Custer Hollow Road, Clarksburg, WV 26306 as set forth in 28 C.F.R. 16.30 through 16.34. In the latter case, the FBI will forward the challenge to the agency that submitted the data, and will request that the agency verify or correct

the challenged entry. Upon receipt of an official communication directly from the agency that contributed the original information, the FBI Identification Division makes any changes necessary in accordance with the information supplied by that agency. Licensees must provide at least (~~ten~~) 10 days for an individual to initiate action to challenge the results of an FBI criminal history records check after the record being made available for their review. The licensee may make a final adverse determination based upon the criminal history records only after receipt of the FBI's confirmation or correction of the record.

(8) Records.

(a) The licensee shall retain documentation regarding the trustworthiness and reliability of individual employees for three years from the date the individual no longer requires unescorted access to Category 1 or Category 2 quantities of radioactive material.

(b) The licensee shall retain a copy of the current access authorization program procedures as a record for three years after the procedure is no longer needed. If any portion of the procedure is superseded, the licensee shall retain the superseded material for three years after the record is superseded.

(c) The licensee shall retain the list of persons approved for unescorted access authorization for three years after the list is superseded or replaced.

[Statutory Authority: RCW 70.98.050 and 70.98.110. WSR 17-01-034, § 246-237-023, filed 12/12/16, effective 1/12/17; WSR 16-13-079, § 246-237-023, filed 6/14/16, effective 7/15/16.]

AMENDATORY SECTION (Amending WSR 16-13-079, filed 6/14/16, effective 7/15/16)

WAC 246-237-027 Requirements for criminal history records checks of individuals granted unescorted access to Category 1 or Category 2 quantities of radioactive material. (1) General performance objective and requirements.

(a) Except for those individuals listed in WAC 246-237-029 and those individuals grandfathered under WAC 246-237-025(2), each licensee subject to the provisions of this chapter shall fingerprint each individual who is to be permitted unescorted access to Category 1 or Category 2 quantities of radioactive material. Licensees shall transmit all collected fingerprints to the NRC for transmission to the FBI. The licensee shall use the information received from the FBI as part of the required background investigation to determine whether to grant or deny further unescorted access to Category 1 or Category 2 quantities of radioactive materials for that individual.

(b) The licensee shall notify each affected individual that their fingerprints will be used to secure a review of their criminal history record, and shall inform them of the procedures for revising the record or adding explanations to the record.

(c) Fingerprinting is not required if a licensee is reinstating an individual's unescorted access authorization to Category 1 or Category 2 quantities of radioactive materials if:

(i) The individual returns to the same facility that granted unescorted access authorization within (~~three hundred sixty-five~~) 365 days of the termination of their unescorted access authorization; and

(ii) The previous access authorization was terminated under favorable conditions.

(d) Fingerprints do not need to be taken if an individual who is an employee of a licensee, contractor, manufacturer, or supplier has been granted unescorted access to Category 1 or Category 2 quantities of radioactive material, access to safeguards information, or safeguards information-modified handling by another licensee, based upon a background investigation conducted under this chapter, or the fingerprint orders, or 10 C.F.R. 73. An existing criminal history records check file may be transferred to the licensee asked to grant unescorted access in accordance with the provisions of WAC 246-237-031(3).

(e) Licensees shall use information obtained as part of a criminal history records check solely for the purpose of determining an individual's suitability for unescorted access authorization to Category 1 or Category 2 quantities of radioactive materials, access to safeguards information, or safeguards information-modified handling.

(2) Prohibitions.

(a) Licensees may not base a final determination to deny an individual unescorted access authorization to Category 1 or Category 2 quantities of radioactive material solely on the basis of information received from the FBI involving:

(i) An arrest more than one year old for which there is no information of the disposition of the case; or

(ii) An arrest which resulted in dismissal of the charge or an acquittal.

(b) Licensees may not use information received from a criminal history records check obtained under this chapter in a manner which would infringe upon the rights of any individual under the First Amendment to the Constitution of the United States, nor shall licensees use the information in any way that would discriminate among individuals on the basis of race, religion, national origin, gender, or age.

(3) Procedures for processing of fingerprint checks.

(a) For the purpose of complying with this chapter, licensees shall use an appropriate method to submit to the U.S. Nuclear Regulatory Commission, Director, Division of Facilities and Security, 11545 Rockville Pike, ATTN: Criminal History Program/Mail Stop (~~(TWB-05B32M)~~) T-07D04M, Rockville, MD 20852, one completed, legible standard fingerprint card (Form FD-258, ORIMDNRC000Z), electronic fingerprint scan or, where practicable, other fingerprint record for each individual requiring unescorted access to Category 1 or Category 2 quantities of radioactive material. Copies of these forms may be obtained by (~~writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001, by calling 1-630-829-9565, or by email to FORMS.Resource@nrc.gov~~) emailing MAILSVS.Resource@nrc.gov. Guidance on submitting electronic fingerprints can be found at (~~(http://www.nrc.gov/site-help/e-submittals.html)~~) https://www.nrc.gov/security/chp.html.

(b) Fees for the processing of fingerprint checks are due upon application. Licensees shall submit payment with the application for the processing of fingerprints through corporate check, certified check, cashier's check, money order, or electronic payment, made payable to "U.S. NRC." (For guidance on making electronic payments, contact the (~~Security Branch, Division of Facilities and Security at 301-415-7513~~) Division of Physical and Cyber Security Policy by emailing Crimhist.resource@nrc.gov.) Combined payment for multiple applications is acceptable. The (~~(NRC)~~) commission publishes the amount

of the fingerprint check application fee on the NRC's public website. (To find the current fee amount, go to the ~~((electronic submittals page at <http://www.nrc.gov/site-help/e-submittals.html>)~~) Licensee Criminal History Records Checks and Firearms Background Check information page at <https://www.nrc.gov/security/chp.html> and see the link for ~~((the Criminal History Program under Electronic Submission Systems-))~~ How do I determine how much to pay for the request?)

(c) The ~~((NRC))~~ commission will forward to the submitting licensee all data received from the FBI as a result of the licensee's application for criminal history records checks.

[Statutory Authority: RCW 70.98.050 and 70.98.110. WSR 16-13-079, § 246-237-027, filed 6/14/16, effective 7/15/16.]

AMENDATORY SECTION (Amending WSR 16-13-079, filed 6/14/16, effective 7/15/16)

WAC 246-237-043 General security program requirements. (1) Security plan.

(a) Each licensee identified in WAC 246-237-041(1) shall develop a written security plan specific to its facilities and operations. The purpose of the security plan is to establish the licensee's overall security strategy to ensure the integrated and effective functioning of the security program required by this chapter. The security plan must, at a minimum:

(i) Describe the measures and strategies used to implement the requirements of this chapter; and

(ii) Identify the security resources, equipment, and technology used to satisfy the requirements of this chapter.

(b) The security plan must be reviewed and approved by the individual with overall responsibility for the security program.

(c) A licensee shall revise its security plan as necessary to ensure the effective implementation of department requirements. The licensee shall ensure that:

(i) The revision has been reviewed and approved by the individual with overall responsibility for the security program; and

(ii) The affected individuals are instructed on the revised plan before the changes are implemented.

(d) The licensee shall retain a copy of the current security plan as a record for three years after the security plan is no longer required. If any portion of the plan is superseded, the licensee shall retain the superseded material for three years after the record is superseded.

(2) Implementing procedures.

(a) The licensee shall develop and maintain written procedures that document how the requirements of this chapter and the security plan will be met.

(b) The implementing procedures and revisions to these procedures must be approved in writing by the individual with overall responsibility for the security program.

(c) The licensee shall retain a copy of the current procedure as a record for three years after the procedure is no longer needed. Superseded portions of the procedure must be retained for three years after the record is superseded.

(3) Training.

(a) Each licensee shall conduct training to ensure those individuals implementing the security program possess and maintain the knowledge, skills, and abilities to carry out their assigned duties and responsibilities effectively. The training must include instruction in:

(i) The licensee's security program and procedures to secure Category 1 or Category 2 quantities of radioactive material, and in the purposes and functions of the security measures employed;

(ii) The responsibility to report promptly to the licensee any condition which causes or may cause a violation of department requirements;

(iii) The responsibility of the licensee to report promptly to the LLEA and licensee any actual or attempted theft, sabotage, or diversion of Category 1 or Category 2 quantities of radioactive material; and

(iv) The appropriate response to security alarms.

(b) In determining those individuals who shall be trained on the security program, the licensee shall consider each individual's assigned activities during authorized use and response to potential situations involving actual or attempted theft, diversion, or sabotage of Category 1 or Category 2 quantities of radioactive material. The extent of the training must be commensurate with the individual's potential involvement in the security of Category 1 or Category 2 quantities of radioactive material.

(c) Refresher training must be provided at a frequency not to exceed (~~twelve~~) 12 months and when significant changes have been made to the security program. This training must include:

(i) Review of the training requirements of this subsection and any changes made to the security program since the last training;

(ii) Reports on any relevant security issues, problems, and lessons learned;

(iii) Relevant results of department inspections; and

(iv) Relevant results of the licensee's program review and testing and maintenance.

(d) The licensee shall maintain records of the initial and refresher training for three years from the date of the training. The training records must include dates of the training, topics covered, a list of licensee personnel in attendance, and related information.

(4) Protection of information.

(a) Licensees authorized to possess Category 1 or Category 2 quantities of radioactive material shall limit access to, and unauthorized disclosure of, their security plan, implementing procedures, and the list of individuals who have been approved for unescorted access.

(b) Efforts to limit access shall include the development, implementation, and maintenance of written policies and procedures for controlling access to, and for proper handling and protection against unauthorized disclosure of, the security plan and implementing procedures, and the list of individuals that have been approved for unescorted access.

(c) Before granting an individual access to the security plan or implementing procedures, or the list of individuals that have been approved for unescorted access, licensees shall:

(i) Evaluate an individual's need to know the security plan or implementing procedures, or the list of individuals that have been approved for unescorted access; and

(ii) If the individual has not been authorized for unescorted access to Category 1 or Category 2 quantities of radioactive material,

safeguards information, or safeguards information-modified handling, the licensee must complete a background investigation to determine the individual's trustworthiness and reliability. A trustworthiness and reliability determination shall be conducted by the reviewing official and shall include the background investigation elements contained in WAC 246-237-025 (1)(b) through (g).

(d) Licensees need not subject the following individuals to the background investigation elements for protection of information:

(i) The categories of individuals listed in WAC 246-237-029 (1)(a) through (m); or

(ii) Security service provider employees, provided written verification that the employee has been determined to be trustworthy and reliable, by the required background investigation in WAC 246-237-025 (1)(b) through (g), has been provided by the security service provider.

(e) The licensee shall document the basis for concluding that an individual is trustworthy and reliable and should be granted access to the security plan ~~((~~☒~~))~~, implementing procedures, or the list of individuals that have been approved for unescorted access.

(f) Licensees shall maintain a list of persons currently approved for access to the security plan ~~((~~☒~~))~~, implementing procedures, or the list of individuals that have been approved for unescorted access. When a licensee determines that a person no longer needs access to the security plan ~~((~~☒~~))~~, implementing procedures, or the list of individuals that have been approved for unescorted access, or no longer meets the access authorization requirements for access to the information, the licensee shall remove the person from the approved list as soon as possible, but no later than seven working days, and take prompt measures to ensure that the individual is unable to obtain the security plan ~~((~~☒~~))~~, implementing procedures, or the list of individuals that have been approved for unescorted access.

(g) When not in use, the licensee shall store its security plan ~~((~~and~~))~~, implementing procedures, and the list of individuals that have been approved for unescorted access in a manner to prevent unauthorized access. Information stored in nonremovable electronic form must be password protected.

(h) The licensee shall retain as a record for three years after the document is no longer needed:

(i) A copy of the information protection procedures; and

(ii) The list of individuals approved for access to the security plan ~~((~~☒~~))~~, implementing procedures, or the list of individuals that have been approved for unescorted access.

[Statutory Authority: RCW 70.98.050 and 70.98.110. WSR 16-13-079, § 246-237-043, filed 6/14/16, effective 7/15/16.]

AMENDATORY SECTION (Amending WSR 17-01-034, filed 12/12/16, effective 1/12/17)

WAC 246-237-077 Advance notification of shipment of Category 1 quantities of radioactive material. As specified in subsections (1) and (2) of this section, each licensee shall provide advance notification to the department and the governor of a state, or the governor's designee, of the shipment of licensed material in a Category 1 quantity, through or across the boundary of the state, before transport, or

delivery to a carrier for transport, of the licensed material outside the confines of the licensee's facility or other place of use or storage.

(1) Procedures for submitting advance notification.

(a) The notification must be made to the department and to the office of each appropriate governor or governor's designee. The contact information, including telephone and mailing addresses, of governors and governors' designees, is available on the NRC's website at <https://scp.nrc.gov/special/designee.pdf>. A list of the contact information is also available upon request from the Director, Division of Material Safety, Security, State, and Tribal (~~and Rulemaking~~) Programs, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001. Notifications to the department must be made to the attention of the Director, Office of Radiation Protection.

(b) A notification delivered by mail must be postmarked at least seven days before transport of the shipment commences at the shipping facility.

(c) A notification delivered by any means other than mail must reach the department at least four days before transport of the shipment commences and must reach the office of the governor or the governor's designee at least four days before transport of a shipment within or through the state.

(2) Information to be furnished in advance notification of shipment. Each advance notification of shipment of Category 1 quantities of radioactive material must contain the following information, if available at the time of notification:

(a) The name, address, and telephone number of the shipper, carrier, and receiver of the Category 1 radioactive material;

(b) The license numbers of the shipper and receiver;

(c) A description of the radioactive material contained in the shipment, including the radionuclides and quantities;

(d) The point of origin of the shipment and the estimated time and date when shipment will commence;

(e) The estimated time and date the shipment is expected to enter each state along the route;

(f) The estimated time and date of arrival of the shipment at the destination; and

(g) A point of contact, with a telephone number, for current shipment information.

(3) Revision notice.

(a) The licensee shall provide any information not previously available at the time of the initial notification, as soon as the information becomes available but not later than commencement of the shipment, to the governor of the state or the governor's designee and to the department.

(b) A licensee shall promptly notify the governor of the state or the governor's designee of any changes to the information provided in accordance with subsections (2) and (3)(a) of this section. The licensee shall also immediately notify the department of any such changes.

(4) Cancellation notice. Each licensee who cancels a shipment for which advance notification has been sent shall send a cancellation notice to the department and to the governor of each state or to the governor's designee previously notified. The licensee shall send the cancellation notice before the shipment would have commenced or as soon thereafter as possible. The licensee shall state in the notice

that it is a cancellation and identify the advance notification which is being canceled.

(5) Records. The licensee shall retain a copy of the advance notification and any revision and cancellation notices as a record for three years.

(6) Protection of information. State officials, state employees, and other individuals, whether or not licensees of the department, NRC, or an agreement state who receive schedule information of the kind specified in subsection (2) of this section shall protect that information against unauthorized disclosure as specified in WAC 246-237-043(4).

[Statutory Authority: RCW 70.98.050 and 70.98.110. WSR 17-01-034, § 246-237-077, filed 12/12/16, effective 1/12/17; WSR 16-13-079, § 246-237-077, filed 6/14/16, effective 7/15/16.]

OTS-3488.2

AMENDATORY SECTION (Amending WSR 03-12-062, filed 6/2/03, effective 7/3/03)

WAC 246-243-150 Personnel monitoring control. (1) A licensee may not permit any individual to act as a radiographer or as a radiographer's assistant unless, at all times during radiographic operations, the individual wears a direct reading pocket dosimeter, an alarming rate meter, and a personnel dosimeter (~~that is processed and evaluated by an accredited National Voluntary Laboratory Accreditation Program (NVLAP) processor~~) on the trunk of the body. In permanent facilities where other appropriate alarming or warning devices are in routine use, the wearing of an alarming rate meter is not required.

(a) Pocket dosimeters must be capable of measuring exposures from zero to at least 200 milliroentgens. Electronic personal dosimeters may only be used in place of ion-chamber pocket dosimeters.

(b) Each personnel dosimeter shall be assigned to and worn by only one individual.

(c) Film badges must be replaced at periods not to exceed one month and other personnel dosimeters (~~processed and evaluated by an accredited NVLAP processor~~) that require replacement must be replaced at periods not to exceed three months. All personnel dosimeters must be evaluated at least quarterly or promptly after replacement, whichever is more frequent.

~~((d) After replacement, each personnel dosimeter must be processed as soon as possible.))~~

(2) (a) Direct reading dosimeters such as pocket dosimeters or electronic personal dosimeters shall be read and exposures recorded at the beginning and end of each shift. Pocket dosimeters shall be charged at the beginning of each shift. Pocket dosimeters shall be checked annually at periods not to exceed (~~twelve~~) 12 months for correct response to radiation. Acceptable dosimeters shall read within plus or minus (~~twenty~~) 20 percent of the true radiation exposure.

(b) Each alarming rate meter must:

(i) Be checked to ensure that the alarm functions properly (sounds) prior to use at the start of each shift;

- (ii) Be set to give an alarm signal at a maximum preset rate of 5 mSv/hr. (500 mR/hr.);
- (iii) Require special means to change the preset alarm functions; and
- (iv) Be calibrated annually at periods not to exceed (~~twelve~~) 12 months for correct response to radiation: Acceptable rate meters must alarm within plus or minus (~~twenty~~) 20 percent of the true radiation exposure rate.

(3) If an individual's pocket dosimeter is found to be off-scale, or if his or her electronic personal dosimeter reads greater than 2 millisieverts (200 millirems), and the possibility of radiation exposure cannot be ruled out as the cause, the individual's personnel dosimeter that require processing must be sent for processing and evaluation within (~~twenty-four~~) 24 hours. For personnel dosimeters that do not require processing, evaluation of the dosimeter must be started within 24 hours. In addition, the individual may not resume work associated with licensed material use until a determination of the individual's radiation exposure has been made. This determination shall be made by the RSO or the RSO's designee.

(4) If the personnel dosimeter required by this section is lost or damaged, the worker shall cease work immediately until a replacement personnel dosimeter is provided and the exposure is calculated for the time period from issuance to loss or damage of the personnel dosimeter.

(5) Each licensee shall maintain the following exposure records:

(a) Direct reading dosimeter readings and yearly operability checks required by subsection (2) of this section for three years after the record is made.

(b) Records of alarm rate meter calibrations for three years after the record is made.

(c) Reports (~~received from the~~) of personnel dosimeter (~~accredited NVLAP processor~~) until the department terminates the license.

(d) Records of estimates of exposures as a result of: Off-scale personal direct reading dosimeters, or lost or damaged personnel dosimeters(~~7~~) until the department terminates the license. The time period for which the personnel dosimeter was lost or damaged shall be included in the records.

[Statutory Authority: RCW 70.98.050. WSR 03-12-062, § 246-243-150, filed 6/2/03, effective 7/3/03; WSR 00-08-013, § 246-243-150, filed 3/24/00, effective 4/24/00; WSR 94-01-073, § 246-243-150, filed 12/9/93, effective 1/9/94. Statutory Authority: RCW 70.98.050 and 70.98.080. WSR 91-15-112 (Order 184), § 246-243-150, filed 7/24/91, effective 8/24/91. Statutory Authority: RCW 43.70.040. WSR 91-02-049 (Order 121), recodified as § 246-243-150, filed 12/27/90, effective 1/31/91. Statutory Authority: RCW 70.98.080. WSR 83-19-050 (Order 2026), § 402-36-120, filed 9/16/83. Statutory Authority: RCW 70.98.050. WSR 81-01-011 (Order 1570), § 402-36-120, filed 12/8/80; Order 1084, § 402-36-120, filed 1/14/76; Order 1, § 402-36-120, filed 1/8/69; Rules (part), filed 10/26/66.]

OTS-3489.1

AMENDATORY SECTION (Amending WSR 03-12-062, filed 6/2/03, effective 7/3/03)

WAC 246-244-160 Personnel monitoring. (1) The licensee may not permit an individual to act as a logging supervisor or logging assistant unless that person wears (~~(, at all times during the handling of licensed radioactive materials,)~~) a personnel dosimeter (~~((that is processed by an accredited National Voluntary Laboratory Accreditation Program (NVLAP) processor))~~) at all times during the handling of licensed radioactive materials. Each personnel dosimeter must be assigned to and worn by only one individual. The film badge must be (~~(exchanged and analyzed)~~) replaced at least monthly and other personnel dosimeters (~~(exchanged and analyzed)~~) that require replacement must be replaced at least every three months, whichever is more frequent. (~~(The licensee shall have each personnel dosimeter processed in a timely fashion.)~~)

(2) The licensee shall provide appropriate bioassay services to individuals using licensed materials (~~(for)~~) in subsurface tracer studies if required by the license.

(3) The licensee shall keep reports (~~(received from the accredited NVLAP personnel dosimeter processor)~~) of personnel dosimeter required by subsection (1) of this section and (~~(from the)~~) bioassay (~~(service laboratory)~~) results for inspection until the department authorizes disposition (~~(or terminates the license)~~) of the records.

(4) Personnel monitoring devices and equipment shall monitor for beta, gamma, and neutron radiation as appropriate.

(5) Each licensee shall adhere to the requirements of (~~(the department's)~~) NRC Regulatory Guide 8.20 (~~(Bioassay Program Criteria for I-125 and I-131)~~) Application of Bioassay for Radioiodine.

[Statutory Authority: RCW 70.98.050. WSR 03-12-062, § 246-244-160, filed 6/2/03, effective 7/3/03. Statutory Authority: RCW 70.98.050 and 70.98.080. WSR 91-15-112 (Order 184), § 246-244-160, filed 7/24/91, effective 8/24/91. Statutory Authority: RCW 43.70.040. WSR 91-02-049 (Order 121), recodified as § 246-244-160, filed 12/27/90, effective 1/31/91. Statutory Authority: RCW 70.98.080. WSR 87-01-031 (Order 2450), § 402-38-300, filed 12/11/86.]