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## ***Holtec International Generic Report***

# ***HI-STORE CIS Facility Training and Qualification Program***

**Holtec Report No: HI-2177562**

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**REVISION LOG**

Revision	Revision Changes
0	Initial revision.
1	Added reference to Security Training and Qualification Plan and other minor editorial changes.
2	Minor editorial changes.

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**HI-STORE CIS Facility Training and Qualification Program****1.0 INTRODUCTION**

Holtec International (Holtec) is currently seeking a Nuclear Materials License from the Nuclear Regulatory Commission (NRC) requesting authorization to construct and operate a Central Interim Storage (CIS) Facility (HI-STORE) to store 500 sealed canisters containing spent fuel and discharged reactor internal parts from commercial US nuclear power plants. This CIS Facility would remain in operation until such time that the Department of Energy is prepared to accept Spent Nuclear Fuel (SNF) and Greater Than Class C (GTCC) wastes from commercial nuclear plant licensees. When the requested CIS Facility license is issued by the NRC, Holtec subsequently anticipates requesting an amendment to the license to request authorization to possess and store an additional 500 canisters for each of 19 subsequent expansion phases to be completed over the course of years. Ultimately, Holtec anticipates that approximately 10,000 SNF canisters would be stored at the CIS Facility upon completion of all 20 phases.

The primary objective of the CIS Facility training and qualification program is to prepare personnel to operate the CIS Facility in a safe and environmentally sound manner. As this facility will be handling spent nuclear fuel and GTCC waste from the commercial nuclear power industry, it falls under the provenance of 10 CFR Part 72 [Ref. 4.1], and training for this facility will be based on training used in the nuclear power industry, specifically for the handling and storage of SNF.

An adequate complement of trained and qualified facility personnel must be in place prior to the receipt of spent fuel and/or reactor-related GTCC waste as appropriate for storage. Personnel working at the CIS Facility will be required to meet technical qualifications, including training and experience.

Training for all personnel on site will include basic radiation worker training, similar to nuclear power plant annual training, as well as how to respond to an emergency. Position specific training will consist of both classroom and on-the-job training (OJT). Radiological Emergency Response Training will also be made available to those offsite who may be called in to assist in an emergency onsite.

Training for using specialized equipment will be outsourced to other organizations that have training programs already in place. Training required for rail yard work and crane operations will be outsourced, as discussed in more detail in those sections. Records of this training and other qualifications will be maintained at the site.

Training requirements will apply to all employees of the CIS Facility and contractors who regularly work at the site that may come in contact with nuclear fuel or radioactive contamination. This training program will be developed from a systems approach to training, similar to the approach defined in 10 CFR 55.4 [Ref. 4.2], in order to be consistent with industry standards.

Training requirements and qualification for the CIS Facility include:

- Classroom Instruction

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- Hands on Training using “dummy” canisters and/or empty casks
- On-the-Job Training
- Qualification Cards
- Refresher Training

Following technical training, trainees must successfully complete written, practical or oral examinations to demonstrate competency. These examinations will be based on objectives and/or competency. Trainees should also provide feedback on the content and quality of instruction in the form of course critiques and verbal input.

Training documentation is maintained by the Training Department and will include course attendance, completed qualification cards, off-site training documentation, and examination results. All documentation will also be kept in an electronic database.

Training that is specific to Security personnel is addressed in HI-2177561, Security Training and Qualification Plan (SGI) [Ref. 4.5].

**HI-STORE CIS Facility Training and Qualification Program****2.0 REGULATORY COMPLIANCE**

The HI-STORE CIS Facility is defined as an Away From Reactor (AFR) Independent Spent Fuel Storage Installation (ISFSI) that accepts and stores SNF and GTCC Waste from commercial nuclear reactors from other sites. As an AFR ISFSI, the CIS Facility is not licensed under 10 CFR Part 50, thus requiring a site-specific license by the NRC under 10 CFR Part 72. 10 CFR 72.192, Operator training and certification program, requires that the license application submittal for a site-specific ISFSI must contain a program for training, proficiency testing, and certification of ISFSI personnel.

In accordance with 10 CFR Part 72, Subpart I, Training and Certification of Personnel [Ref. 4.3], operation of equipment and controls that have been identified as important to safety in the Safety Analysis Report and in the license must be limited to trained and certified personnel or be under the direct supervision of an individual with training and certification in the operation. Supervisory personnel who personally direct the operation of equipment and controls that are important to safety must also be certified in such operations. Holtec equipment designated as Important to Safety is listed under the description for Holtec Equipment Operators.

As stated in 10 CFR 72.194, Physical requirements, the physical condition and the general health of personnel qualified for the operation of equipment and controls that are important to safety must not be such as might cause operational errors that could endanger other in-plant personnel or the public health and safety. Any condition that might cause impaired judgment or motor coordination must be considered in the selection of personnel for activities that are important to safety. These conditions need not categorically disqualify a person, if appropriate provisions are made to accommodate such defect.

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**3.0 DEFINITIONS**

None.

**4.0 REFERENCES**

- 4.1 NRC, 10 CFR Part 72, Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater than Class C Waste
- 4.2 NRC, 10 CFR Part 55.4, Definitions
- 4.3 NRC, 10 CFR Part 72, Subpart I, Training and Certification of Personnel
- 4.4 NRC, 10 CFR Part 20, Standards for Protection Against Radiation
- 4.5 Holtec Report HI-2177561 "Security Training and Qualification Plan" Latest Revision.

**5.0 RESPONSIBILITIES**

**5.1 Site Manager**

The Site Manager is responsible for implementation of employee training for the purpose of spent nuclear fuel storage at the CIS Facility.

**5.2 Training Department**

The Training Department is responsible for ensuring that all personnel are trained and qualified for the positions that they are assigned, prior to being allowed to perform independent work in the field.

**5.3 Training Coordinator (TC)**

The TC is responsible for developing and maintaining lesson plans, exams, customer surveys and qualification cards.

**5.4 Training Administrative Assistant (TAA)**

The TAA is the owner of the training records, and is responsible for maintaining records of all training received by CIS Facility personnel, and the maintenance of the qualification cards. The TAA is also responsible for filing of training plans, exams, and training surveys.



**HI-STORE CIS Facility Training and Qualification Program****6.0 BASIC WORKER TRAINING****6.1 Basic Radiation Worker**

The CIS Facility is designed to keep all radioactive material and contamination within the fuel storage casks. Every effort will be made to ensure that the storage casks are not shipped contaminated and do not become contaminated. Workers will need to be trained and prepared in basic radiation worker training.

Basic radiation worker training is available through the Institute of Nuclear Power Operation's Nuclear Training Academy, which has become an industry standard allowing for trained contract workers to move from site to site with little retraining required.

**6.2 Health Physics Technician / Health Physicist**

Health Physics Technicians' or Health Physicists' training will be limited to reemphasizing fundamentals already learned, while learning site-specific familiarization.

The Health Physics Technician / Health Physicist (HP) will be responsible for performing radiological surveys and postings on the site, establishing and maintaining a radiation protection program, maintaining the site dosimetry at the boundaries, maintaining personnel dosimetry, and participating in emergency response activities. The HP will also maintain dosimetry records for site personnel in accordance with 10 CFR 20.2106 [Ref. 4.4]. Training will cover the performance of these tasks.

**6.3 Surveillance Technician**

The Surveillance Technician will be responsible for performing and documenting the ISFSI surveillances, facility inspections, and tracking and reporting Special Nuclear Material and GTCC Waste Control Accountability. Training will cover the performance of these tasks. As the Temperature Monitoring elements are considered Important to Safety, performance of the temperature surveillance is limited to trained and qualified personnel, or will be under the direct visual supervision of an individual with training and qualification in the operation. Supervisory personnel who personally direct the operation of equipment and controls that are Important to Safety must also be qualified in such operation.

**6.4 Rail Yard Operators**

The CIS Facility will have a small rail yard within the facility. It is anticipated that the spent nuclear fuel shipments will be delivered up to the CIS Facility gate, where a switch engine will take over from the main line to move the rail cars into place for unloading. Operation of the switch engine, along with the overall operation of the rail yard, will require specialized training. The CIS Facility will be highly dependent on the BNSF railroad, specifically the Southwestern Railroad (a shortline which operates in Carlsbad, New Mexico), for bringing the used fuel rail cars up to the

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gate. Used nuclear fuel from around the country will be shipped via rail, and close coordination with Southwestern Railroad will be essential for smooth operations.

BNSF operates the National Academy of Railroad Sciences, (NARS), with specific training courses aimed at industrial train operations to provide instruction both at their training center in Kansas and at the customer's facility. Training on how to operate the switcher engine and how to operate the rail yard will be provided by NARS. Using the BNSF program also helps to ensure that the rail yard operating practices developed for the CIS Facility are consistent with the operating practices of Southwestern Railroad, thus creating less opportunity for miscommunication or error.

**6.5 Crane Operators**

Crane operations will require crane operator training. Initial crane operation training should be covered by the manufacturer of the crane selected for installation in the CIS Facility. Once the initial training and qualification has been received, CIS Facility personnel will develop on-site training for the CIS Facility. As the crane is a load handling device, it is designated as Important to Safety. Crane operation is limited to trained and qualified personnel or may be performed under the direct visual supervision of an individual with training and qualification in the operation. Supervisory personnel who personally direct the operation of equipment and controls that are Important to Safety must also be qualified in such operation.

**6.6 Holtec Equipment Operators**

The Holtec Equipment Operators will require training and qualification on the use of the Holtec equipment, including the Vertical Cask Transporter, as well as training on the transfer of fuel from the rail car to the underground storage. Dry run training will be employed using a dummy fuel cask and a Vertical Ventilated Module mock-up to allow the operators to gain proficiency before actual fuel is being transferred. Holtec equipment that will be used by the Holtec Equipment Operators that is designated as Important to Safety includes the Multi-Purpose Canisters (MPCs), the HI-TRAC VW, the Mating Device (used for transferring the MPC from the rail transport cask to the HI-TRAC VW), and the cask transporter. Operation of the equipment is limited to trained and qualified personnel or the equipment may be operated under the direct visual supervision of an individual with training and qualification in the operation. Supervisory personnel who personally direct the operation of equipment and controls that are Important to Safety must also be qualified in such operation.

**6.7 Emergency Response Team**

The CIS Facility training program is designed to ensure that CIS Facility personnel are trained to respond appropriately and effectively to emergency situations. Training includes instruction on the CIS Facility Emergency Plan, On-Site Emergency staff assignments, Emergency equipment operation including personal protective equipment (respirators, eye and ear protection, breathing apparatus, and protective clothing), first aid, and basic firefighting skills.

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Emergency drills and exercises are also considered part of the training program. Emergency team qualification will include participation in at least two drills or exercises as a trainee. Once qualified, annual refresher training is required to maintain qualification.

Training for off-site personnel will also be provided for individuals who do not work at the CIS Facility, but may be called upon to respond to it in an emergency situation. These personnel may also participate in drills and exercises.

**7.0 IMPLEMENTATION OF THE TRAINING PROGRAM**

The CIS Facility training and qualification program will be implemented to ensure that SNF/GTCC storage and emergency response personnel employed at the CIS Facility receive the training indicated on their respective qualification cards, prior to receipt of fuel. Qualification cards will be used to record the training received for position-specific training as well as record tasks performed under supervision.

Records, including lesson plans, training rosters, exams, exam results, training customer surveys and qualification cards, will be retained at the CIS Facility site by Training. Training records of current personnel will be retained on the site. Training records of former employees will be retained for three years, at a minimum, after the employee has left.

**8.0 APPENDICES**

None