UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 14, 2023

Mark Soler, Vice President of Quality
Holtec International
1 Holtec Boulevard
Camden, NJ 08104

SUBJECT: U.S. NUCLEAR REGULATORY COMMISSION INSPECTION REPORT NO. 72-1014/2023-201

Dear Mark Soler:

On June 15, 2023, the U.S. Nuclear Regulatory Commission (NRC) staff conducted an announced on-site inspection of Holtec International (Holtec) on-site fabrication activities at Byron Station in Byron, IL. Holtec is under contract with Constellation Energy to provide important to safety components of the Holtec HI-STORM 100 system.

The purpose of the inspection was to verify and assess the adequacy of Holtec's compliance with the NRC requirements for the design, modification, fabrication, assembly, testing, and procurement of Holtec components. Holtec is the holder of the certificate of compliance (CoC) and designer of the Holtec HI-STORM 100 system.

The inspection scope included observations of in field fabrication activities, reviews of records, and interviews with personnel to determine whether a dry storage system, fabricated for use in an independent spent fuel storage installation, is constructed in accordance with the commitments and requirements specified in the safety analysis report, the NRC’s corresponding safety evaluation report, Title 10 of the *Code of Federal Regulations* (10 CFR) Part 72 and the CoC and technical specifications; and to determine whether the outside fabricator’s activities are conducted in accordance with NRC-approved Quality Assurance Program requirements. The enclosed report presents the results of this inspection, which were discussed with you and other members of your staff on June 15, 2023.

Based on the results of this inspection, no findings of significance were identified.

In accordance with 10 CFR 2.390, “Public inspections, exemptions, requests for withholding,” a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room (PDR) or from the Publicly Available Records component of the NRC’s Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC website at http://www.nrc.gov/reading-rm/adams.html. The PDR is open by appointment. To make an appointment to visit the PDR, please send an email to PDR.Resource@nrc.gov or call 1-800-397-4209 or 301-415-4737, between 8 a.m. and 4 p.m. eastern time (ET), Monday through Friday, except Federal holidays.

Sincerely,

Natreon J. Jordan

Natreon Jordan, Acting Chief
Inspection and Oversight Branch
Division of Fuel Management
Office of Nuclear Material Safety
and Safeguards

Docket No. 72-1014

Enclosure:
NRC Inspection Report No.
72-1014/2023-201

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DOCUMENT DATE: July 14, 2023

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U.S. NUCLEAR REGULATORY COMMISSION
Office of Nuclear Material Safety and Safeguards
Division of Fuel Management

Docket:	72-1014
Report.:	72-1014/2023-201
Enterprise Identifier:	I-2023-201-0034
Certificate Holder:	Holtec International Inc.
Facility:	Byron Station
Location:	Byron, Illinois
Inspection Dates:	June 15, 2023
Inspection Team:	Matthew Learn, Senior Transportation and Storage Safety Inspector
Approved By:	Natreon Jordan, Acting Branch Chief Inspection and Oversight Branch Division of Fuel Management Office of Nuclear Material Safety and Safeguards

Enclosure

U.S. NUCLEAR REGULATORY COMMISSION
Office of Nuclear Material Safety and Safeguards
Division of Fuel Management

EXECUTIVE SUMMARY

Holtec International
NRC Inspection Report 72-1014/2023-201

On June 15, 2023, the U.S. Nuclear Regulatory Commission (NRC) staff conducted an announced on-site inspection of Holtec Internation (Holtec) on-site fabrication activities at Byron Station in Byron, IL.

On-site Fabrication Activities

The inspectors determined that Holtec fabricated dry storage system (DSS) on-site at an independent spent fuel storage installation (ISFSI) in accordance with the commitments and requirements specified in the safety analysis report (SAR), the NRC's corresponding safety evaluation report (SER), Title 10 of the *Code of Federal Regulations* (10 CFR) Part 72 and the certificate of compliance (CoC) and technical specifications (TS); and Holtec's activities were conducted in accordance with NRC-approved Quality Assurance Program (QAP) requirements.

REPORT DETAILS

1.0 On-Site Fabrication of Components and Construction of an Independent Spent Fuel Storage Installation (Inspection Procedure (IP) 60853)

The inspectors performed a limited scope inspection of IP 60853. In accordance with Inspection Manual Chapter 2690, "Inspection Program for Storage of Spent Reactor Fuel and Reactor-Related Greater-Than-Class C Waste at Independent Spent Fuel Storage Installations and for 10 CFR PART 71 Transportation Packagings" only Inspection Requirements of IP 60853 Sections 02.01, 02.02, and 02.03 are performed during DSS vendors performing construction activities on-site at general or specific licensee facilities.

The inspectors reviewed activities associated with fabrication of the HI-STORM 100 system by Holtec at a general licensed ISFSI facility. Specifically, the inspectors observed activities associated with concrete placement in the HI-STORM 100 body overpack at Byron Station. The HI-STORM 100 system shell is fabricated at an offsite Holtec facility under the Holtec quality assurance program and is shipped to a destination ISFSI. Once the HI-STORM shell reaches the destination ISFSI, concrete is placed in the HI-STORM 100 system shell under the Holtec quality assurance program.

1.1 Fabrication Activities (Inspection Requirements 02.01, 02.02, and 02.03)

1.1 <u>Inspection Scope</u>

The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

The inspector determined whether:

- Materials, components, and other equipment and services meet design procurement specifications;

- The procurement specifications conform to the design commitments and requirements contained in the SAR and, as applicable, the CoC and TSs;

- The provisions of 10 CFR Part 21, "Reporting of Defects and Noncompliance," for reporting defects that could cause a substantial safety hazard have been implemented, as appropriate;

- The fabrication specifications are consistent with the design commitments and requirements documented in the SAR, and, as applicable, the CoC and TSs;

- The licensee, vendor, and fabricator personnel have established an effective method for tracking, evaluating, and dispositioning changes or modifications to the DSS component design;

- For selected design changes, the applicable documentation is complete and accurate, including relevant 10 CFR 72.48, "Changes, tests, and experiments," evaluations;

- Individuals performing quality-related activities are trained and certified where required; and

- The on-site fabricator’s personnel are familiar with the specified design, designated fabrication techniques, testing.

With regard to on-site DSS fabrication quality assurance activities, the inspector determined whether:

- DSS components are being fabricated per NRC-approved QAP;

- For selected deficiencies from audits, surveillances, and/or self-assessments, the deficiencies were appropriately handled with corrective actions implemented in a time frame commensurate with their safety significance; and

- Nonconformance reports documenting the deficiencies have been initiated and resolved and corrective actions for identified fabrication deficiencies have been implemented in a time frame commensurate with their significance.

1.1.2 Observation and Findings

The inspector determined, for the items selected for review, that the fabrication specifications were consistent with the design commitments and requirements documented in the SAR, the CoC, and TS.

The inspector determined that the fabricator's personnel were familiar with the specified design, designated fabrication techniques, testing requirements, and quality controls associated with the construction of the DSS. The inspector determined that individuals performing quality-related activities were trained and certified as required.

The inspector determined that DSS components were being fabricated and inspected per the approved QAP.

The inspector determined that corrective actions for identified fabrication deficiencies were implemented in a time frame commensurate with their significance, and nonconformance reports documenting the deficiencies were initiated and resolved.

The inspector determined, for the items selected for review, that the CoC holder is performing oversight and audits in accordance with their QAP.

No findings of significance were identified.

1.1.3 Conclusions

The inspectors determined that Holtec fabricated DSS on-site at an ISFSI in accordance with the commitments and requirements specified in the SAR, the NRC’s corresponding SER, 10 CFR Part 72 and the CoC and TS; and Holtec’s activities were conducted in accordance with NRC-approved QAP requirements.

2.0 Exit Meeting

The inspector presented the results of the inspection to M. Soler and other members of the Holtec staff at an exit meeting on June 15, 2023. The CoC holder acknowledged the results presented and did not identify any of the information discussed as proprietary.

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

M. Soler, Vice President of Quality
D. Burke, Quality Assurance Manager
P. Trendler, Site Services Program Manager

INSPECTION PROCEDURES USED

IP 60853 On-Site Fabrication of Components and Construction of an Independent Spent Fuel Storage Installation

ITEMS OPENED, CLOSED, AND DISCUSSED

None

PARTIAL LIST OF DOCUMENTS REVIEWED

The inspector identified the documents reviewed during the inspection in the report details above.

LIST OF ACRONYMS USED

CFR	Code of Federal Regulations
CoC	Certificate of compliance
DSS	Dry storage system
FSAR	Final Safety Analysis Report
Holtec	Holtec International
IP	Inspection Procedure
IMC	Inspection Manual Chapter
ISFSI	Independent spent fuel storage installation
ITS	Important to safety
NRC	Nuclear Regulatory Commission
QAP	Quality Assurance Program
SAR	Safety analysis report
SER	Safety evaluation report
TS	Technical specifications