

NUCLEAR REGULATORY COMMISSION

10 CFR Part 72

[NRC-2012-0052]

RIN 3150-AJ12

**List of Approved Spent Fuel Storage Casks:
HI-STORM 100 Cask System; Amendment No. 9**

AGENCY: Nuclear Regulatory Commission.

ACTION: Direct final rule.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is amending its spent fuel storage regulations by revising the Holtec International HI-STORM 100 Cask System listing within the “List of Approved Spent Fuel Storage Casks” to include Amendment No. 9 to Certificate of Compliance (CoC) No. 1014. Amendment No. 9 broadens the subgrade requirements for the HI-STORM 100U part of the HI-STORM 100 Cask System and updates the thermal model and methodology for the HI-TRAC transfer cask from a two dimensional thermal-hydraulic model to a more accurate three dimensional model. The amendment also makes editorial corrections.

DATES: The direct final rule is effective **[INSERT DATE 75 DAYS AFTER PUBLICATION IN THE *FEDERAL REGISTER*]**, unless significant adverse comments are received by **[INSERT DATE 30 DAYS AFTER PUBLICATION IN THE *FEDERAL REGISTER*]**. If the direct final rule is withdrawn as a result of such comments, timely notice of the withdrawal will be published

in the *Federal Register*. Comments received after this date will be considered if it is practical to do so, but the NRC staff is able to ensure consideration only for comments received on or before this date.

ADDRESSES: Please refer to Docket ID NRC-2012-0052 when contacting the NRC about the availability of information for this direct final rule. You may access publicly available information related to this direct final rule by the following methods:

- **Federal Rulemaking Web site:** Go to <http://www.regulations.gov> and search for Docket ID NRC-2012-0052. Address questions about NRC dockets to Carol Gallagher, telephone: 301-287-3422, e-mail: Carol.Gallagher@nrc.gov. For technical questions, contact the individual listed in the FOR FURTHER INFORMATION CONTACT section of this document.

- **NRC's Agencywide Documents Access and Management System (ADAMS):**

You may access publicly available documents online in the NRC Library at:

<http://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "ADAMS Public Documents" and then select "Begin Web-based ADAMS Search." For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at: 1-800-397-4209, 301-415-4737, or by e-mail to: pdr.resource@nrc.gov. An electronic copy of the proposed CoC, including Appendices A and B of the Technical Specifications (TS), Appendix A – 100U and Appendix B – 100U of the TS, and the preliminary safety evaluation report (SER) are available in ADAMS under Package Accession No. ML120530246.

- **NRC's PDR:** You may examine and purchase copies of public documents at the NRC's PDR, Room O-1F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

FOR FURTHER INFORMATION CONTACT: Naiem S. Tanious, Office of Federal and State Materials and Environmental Management Programs, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, telephone: 301-415-6103, e-mail: Naiem.Tanious@nrc.gov.

SUPPLEMENTARY INFORMATION:

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I. Procedural Background.

This direct final rule is limited to the changes contained in Amendment No. 9 to CoC No. 1014 and does not include other aspects of the HI-STORM 100 Cask System design. The

NRC is using the “direct final rule procedure” to issue this amendment because it represents a limited and routine change to an existing CoC that is expected to be noncontroversial.

Adequate protection of public health and safety continues to be ensured. The amendment to the rule will become effective on **[INSERT DATE 75 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER]**. However, if the NRC receives significant adverse comments on this direct final rule by **[INSERT DATE 30 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER]**, then the NRC will publish a document that withdraws this action and will subsequently address the comments received in a final rule as a response to the companion proposed rule published in the Proposed Rule section of this issue of the *Federal Register*. Absent significant modifications to the proposed revisions requiring republication, the NRC will not initiate a second comment period on this action.

A significant adverse comment is a comment where the commenter explains why the rule would be inappropriate, including challenges to the rule’s underlying premise or approach, or would be ineffective or unacceptable without a change. A comment is adverse and significant if:

1) The comment opposes the rule and provides a reason sufficient to require a substantive response in a notice-and-comment process. For example, a substantive response is required when:

a) The comment causes the NRC staff to reevaluate (or reconsider) its position or conduct additional analysis;

b) The comment raises an issue serious enough to warrant a substantive response to clarify or complete the record; or

c) The comment raises a relevant issue that was not previously addressed or considered by the NRC staff.

2) The comment proposes a change or an addition to the rule, and it is apparent that the rule would be ineffective or unacceptable without incorporation of the change or addition.

3) The comment causes the NRC staff to make a change (other than editorial) to the rule, CoC, or TSs.

For detailed instructions on submitting comments, please see the companion proposed rule published in the Proposed Rule section of this issue of the *Federal Register*.

II. Background.

Section 218(a) of the Nuclear Waste Policy Act (NWPA) of 1982, as amended, requires that “the Secretary [of the U.S. Department of Energy] shall establish a demonstration program, in cooperation with the private sector, for the dry storage of spent nuclear fuel at civilian nuclear power reactor sites, with the objective of establishing one or more technologies that the [U.S. Nuclear Regulatory] Commission may, by rule, approve for use at the sites of civilian nuclear power reactors without, to the maximum extent practicable, the need for additional site-specific approvals by the Commission.” Section 133 of the NWPA states, in part, that “[the Commission] shall, by rule, establish procedures for the licensing of any technology approved by the Commission under Section 219(a) [sic: 218(a)] for use at the site of any civilian nuclear power reactor.”

To implement this mandate, the Commission approved dry storage of spent nuclear fuel in NRC-approved casks under a general license by publishing a final rule in part 72 of Title 10 of the *Code of Federal Regulations* (10 CFR), “Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater than Class C Waste,” which added a new subpart K within 10 CFR part 72 entitled, “General

License for Storage of Spent Fuel at Power Reactor Sites” (55 FR 29181; July 18, 1990). This rule also established a new subpart L within 10 CFR part 72 entitled, “Approval of Spent Fuel Storage Casks,” which contains procedures and criteria for obtaining NRC approval of spent fuel storage cask designs. The NRC subsequently issued a final rule (65 FR 25241; May 1, 2000) that approved the HI-STORM 100 Cask System design and added it to the list of NRC-approved cask designs in 10 CFR 72.214, “List of approved spent fuel storage casks,” as CoC No.1014.

III. Discussion of Changes.

On September 10, 2010 (ADAMS Accession No. ML102570739), Holtec International submitted a request to the NRC to amend CoC No. 1014. Holtec supplemented its request on the following dates: October 1, 2010 (ADAMS Accession No. ML102780596); November 14, 2011 (ADAMS Accession No. ML11320A185); April 17, 2013 (ADAMS Accession No. ML13114A952); and May 15, 2013 (ADAMS Accession No. ML13137A067). The amendment broadens the subgrade requirements for the HI-STORM 100U part of the HI-STORM 100 Cask System, updates the thermal model and methodology for the HI-TRAC transfer cask from a two dimensional thermal-hydraulic model to a more accurate three dimensional model, and makes editorial corrections. The amendment changes are available in ADAMS under Package Accession No. ML120530246. The ADAMS Accession No. for the HI-STORM 100 Cask System Amendment No. 9, dated June 20, 2013, is ML120530271.

As documented in the SER (ADAMS Accession No. ML120530329), the NRC staff performed a detailed safety evaluation of the proposed CoC amendment request. There are no significant changes to cask design requirements in the proposed CoC amendment. Considering the specific design requirements for each accident condition, the design of the cask would

prevent loss of confinement, shielding, and criticality control. If there is no loss of confinement, shielding, or criticality control, the environmental impacts would be insignificant. This amendment does not reflect a significant change in design or fabrication of the cask. In addition, any resulting occupational exposure or offsite dose rates from the implementation of Amendment No. 9 would remain well within the 10 CFR part 20, "Standards for Protection Against Radiation," limits. Therefore, the proposed CoC changes will not result in any radiological or non-radiological environmental impacts that significantly differ from the environmental impacts evaluated in the environmental assessment supporting the May 1, 2000, final rule. There will be no significant change in the types or significant revisions in the amounts of any effluent released, no significant increase in the individual or cumulative radiation exposure, and no significant increase in the potential for or consequences from radiological accidents.

This direct final rule revises the HI-STORM 100 Cask System listing in 10 CFR 72.214 by adding Amendment No. 9 to CoC No.1014. The amendment consists of the changes previously described, as set forth in the revised CoC and TSs. The revised TSs are identified in the SER.

The amended HI-STORM 100 cask design, when used under the conditions specified in the CoC, the TSs, and the NRC's regulations, will meet the requirements of 10 CFR part 72; therefore, adequate protection of public health and safety will continue to be ensured. When this direct final rule becomes effective, persons who hold a general license under 10 CFR 72.210, "General license issued," may load spent nuclear fuel into HI-STORM 100 Cask Systems that meet the criteria of Amendment No. 9 to CoC No. 1014 under 10 CFR 72.212, "Conditions of general license issued 72.212."

IV. Voluntary Consensus Standards.

The National Technology Transfer and Advancement Act of 1995 (Pub. L. 104-113) requires that Federal agencies use technical standards that are developed or adopted by voluntary consensus standards bodies unless the use of such a standard is inconsistent with applicable law or otherwise impractical. In this direct final rule, the NRC will revise the HI-STORM 100 Cask System design listed in 10 CFR 72.214. This action does not constitute the establishment of a standard that contains generally applicable requirements.

V. Agreement State Compatibility.

Under the “Policy Statement on Adequacy and Compatibility of Agreement State Programs” approved by the Commission on June 30, 1997, and published in the *Federal Register* on September 3, 1997 (62 FR 46517), this direct final rule is classified as Compatibility Category “NRC.” Compatibility is not required for Category “NRC” regulations. The NRC program elements in this category are those that relate directly to areas of regulation reserved to the NRC by the Atomic Energy Act of 1954, as amended, or the provisions of 10 CFR. Although an Agreement State may not adopt program elements reserved to the NRC, it may wish to inform its licensees of certain requirements via a mechanism that is consistent with the particular State’s administrative procedure laws, but does not confer regulatory authority on the State.

VI. Plain Writing.

The Plain Writing Act of 2010 (Pub. L. 111-274) requires Federal agencies to write documents in a clear, concise, well-organized manner that also follows other best practices appropriate to the subject or field and the intended audience. The NRC has attempted to use plain language in promulgating this rule consistent with the Federal Plain Writing Act guidelines.

VII. Finding of No Significant Environmental Impact: Availability.

A. The Action.

The action is to amend 10 CFR 72.214 to revise the HI-STORM 100 Cask System listing within the “List of Approved Spent Fuel Storage Casks” to include Amendment No. 9 to CoC No.1014. Under the National Environmental Policy Act of 1969, as amended, and the NRC regulations in subpart A of 10 CFR part 51, “Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions,” the NRC has determined that this rule, if adopted, would not be a major Federal action significantly affecting the quality of the human environment and, therefore, an environmental impact statement is not required. The NRC has made a finding of no significant impact on the basis of this environmental assessment.

B. The Need for the Action.

This direct final rule amends the CoC for the HI-STORM 100 Cask System design within the list of approved spent fuel storage casks that power reactor licensees can use to store spent fuel at reactor sites under a general license. Specifically, Holtec, in Amendment No. 9, requested changes to broaden the subgrade requirements for the HI-STORM 100U part of the

HI-STORM 100 Cask Storage System, update the thermal model and methodology for the HI-TRAC transfer cask from a two dimensional thermal-hydraulic model to a more accurate three dimensional model, and make editorial corrections.

C. Environmental Impacts of the Action.

The potential environmental impact of using the HI-STORM 100 Cask System was initially analyzed in the environmental assessment for the final rule to add the HI-STORM 100 Cask System to the list of approved spent fuel storage casks in 10 CFR 72.214 (65 FR 25241; May 1, 2000). The environmental assessment for the May 1, 2000, final rule concluded that there would be no significant environmental impacts to adding the HI-STORM 100 Cask System, and therefore, the NRC issued a finding of no significant impact, which continues to be valid. The environmental assessment, for this Amendment No. 9, tiers on the environmental assessment for the May 1, 2000, final rule. Tiering on past environmental assessments is a standard process under the National Environmental Policy Act.

HI-STORM 100 Cask Systems are designed to mitigate the effects of design basis accidents that could occur during storage. Design basis accidents account for human-induced events and the most severe natural phenomena reported for the site and surrounding area. Postulated accidents analyzed for an independent spent fuel storage installation, the type of facility at which a holder of a power reactor operating license would store spent fuel in casks in accordance with 10 CFR part 72, include tornado winds and tornado-generated missiles, a design basis earthquake, a design basis flood, an accidental cask drop, lightning effects, fire, explosions, and other incidents.

Considering the specific design requirements for each accident condition, the design of the cask would prevent loss of confinement, shielding, and criticality control. If there is no loss

of confinement, shielding, or criticality control, the environmental impacts would be insignificant. This amendment does not reflect a significant change in design or fabrication of the cask. There are no significant changes to cask design requirements in the proposed CoC amendment. In addition, because there are no significant design or process changes any resulting occupational exposure or offsite dose rates from the implementation of Amendment No. 9 would remain well within the 10 CFR part 20 limits. Therefore, the proposed CoC changes will not result in any radiological or non-radiological environmental impacts that significantly differ from the environmental impacts evaluated in the environmental assessment supporting the May 1, 2000, final rule. There will be no significant change in the types or significant revisions in the amounts of any effluent released, no significant increase in the individual or cumulative radiation exposure, and no significant increase in the potential for or consequences from radiological accidents. The staff documented its safety findings in an SER which is available in ADAMS under Accession No. ML120530329.

D. Alternative to the Action.

The alternative to this action is to deny approval of Amendment No. 9 and end the direct final rule. Consequently, any 10 CFR part 72 general licensee that seeks to load spent nuclear fuel into HI-STORM 100 Cask Systems in accordance with the changes described in proposed Amendment No. 9 would have to request an exemption from the requirements of 10 CFR 72.212 and 72.214. Under this alternative, interested licensees would have to prepare, and the NRC would have to review, a separate exemption request, thereby increasing the administrative burden upon the NRC and the costs to each licensee. Therefore, the environmental impacts would be the same or less than the action.

E. Alternative Use of Resources.

Approval of Amendment No. 9 to CoC No. 1014 would result in no irreversible commitments of resources.

F. Agencies and Persons Contacted.

No agencies or persons outside the NRC were contacted in connection with the preparation of this environmental assessment.

G. Finding of No Significant Impact.

The environmental impacts of the action have been reviewed under the requirements in 10 CFR part 51. Based on the foregoing environmental assessment, the NRC concludes that this direct final rule entitled, "List of Approved Spent Fuel Storage Casks: HI-STORM 100 Cask System, Amendment No. 9," will not have a significant effect on the human environment. Therefore, the NRC has determined that an environmental impact statement is not necessary for this direct final rule.

VIII. Paperwork Reduction Act Statement.

This direct final rule does not contain any information collection requirements and, therefore, is not subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing requirements were approved by the Office of Management and Budget (OMB), Approval Number 3150-0132.

Public Protection Notification.

The NRC may not conduct or sponsor, and a person is not required to respond to a request for information or an information collection requirement unless the requesting document displays a currently valid OMB control number.

IX. Regulatory Analysis.

On July 18, 1990 (55 FR 29181), the NRC issued an amendment to 10 CFR part 72 to provide for the storage of spent nuclear fuel under a general license in cask designs approved by the NRC. Any nuclear power reactor licensee can use NRC-approved cask designs to store spent nuclear fuel if it notifies the NRC in advance, the spent fuel is stored under the conditions specified in the cask's CoC, and the conditions of the general license are met. A list of NRC approved cask designs is contained in 10 CFR 72.214. On May 1, 2000 (65 FR 25241), the NRC issued an amendment to 10 CFR part 72 that approved the HI-STORM 100 Cask System design by adding it to the list of NRC-approved cask designs in 10 CFR 72.214.

On September 10, 2010, Holtec International submitted a request to the NRC to amend CoC No. 1014. Holtec supplemented its request on the following dates: October 1, 2010, November 14, 2011, April 17, 2013, and May 15, 2013. The amendment broadens the subgrade requirements for the HI-STORM 100U part of the HI-STORM 100 Cask System, updates the thermal model and methodology for the HI-TRAC transfer cask from a two dimensional thermal-hydraulic model to a more accurate three dimensional model, and makes editorial corrections.

The alternative to this action is to withhold approval of Amendment No. 9 and to require any 10 CFR part 72 general licensee seeking to load spent nuclear fuel into HI-STORM 100 Cask Systems under the changes described in Amendment No. 9 to request an exemption from the requirements of 10 CFR 72.212 and 72.214. Under this alternative, each interested 10 CFR part 72 licensee would have to prepare, and the NRC would have to review, a separate exemption request, thereby increasing the administrative burden upon the NRC and the costs to each licensee.

Approval of this direct final rule is consistent with previous NRC actions. Further, as documented in the SER and the environmental assessment, the direct final rule will have no adverse effect on public health and safety or the environment. This direct final rule has no significant identifiable impact or benefit on other Government agencies. Based on this regulatory analysis, the NRC concludes that the requirements of the direct final rule are commensurate with the NRC's responsibilities for public health and safety and the common defense and security. No other available alternative is believed to be as satisfactory, and therefore, this action is recommended.

X. Regulatory Flexibility Certification.

Under the Regulatory Flexibility Act of 1980 (5 U.S.C. 605(b)), the NRC certifies that this direct final rule will not, if issued, have a significant economic impact on a substantial number of small entities. This direct final rule affects only nuclear power plant licensees and Holtec International, Inc. These entities do not fall within the scope of the definition of small entities set forth in the Regulatory Flexibility Act or the size standards established by the NRC (10 CFR 2.810).

XI. Backfitting and Issue Finality.

The NRC has determined that the backfit rule (10 CFR 72.62) does not apply to this direct final rule. Therefore, a backfit analysis is not required. This direct final rule revises CoC No. 1014 for the Holtec International HI-STORM 100 Cask System, as currently listed in 10 CFR 72.214, "List of Approved Spent Fuel Storage Casks." The revision consists of Amendment No. 9, which broadens the subgrade requirements for the HI-STORM 100U part of the HI-STORM 100 Cask System, updates the thermal model and methodology for the HI-TRAC transfer cask from a two dimensional thermal-hydraulic model to a more accurate three dimensional model, and makes editorial corrections.

Amendment No. 9 to CoC No. 1014 for the Holtec International HI-STORM 100 Cask System was initiated by Holtec International and was not submitted in response to new NRC requirements, or an NRC request for amendment. Amendment No. 9 applies only to new casks fabricated and used under Amendment No. 9. These changes do not affect existing users of the HI-STORM 100 Cask System, and the current Amendment No. 8 continues to be effective for existing users. While current CoC users may comply with the new requirements in Amendment No. 9, this would be a voluntary decision on the part of current users. For these reasons, Amendment No. 9 to CoC No. 1014 does not constitute backfitting under 10 CFR 72.62, 10 CFR 50.109(a)(1), or otherwise represent an inconsistency with the issue finality provisions applicable to combined licenses in 10 CFR part 52. Accordingly, no backfit analysis or additional documentation addressing the issue finality criteria in 10 CFR part 52 has been prepared by the staff.

XII. Congressional Review Act.

The Office of Management and Budget has not found this to be a major rule as defined in the Congressional Review Act.

List of Subjects in 10 CFR Part 72

Administrative practice and procedure, Criminal penalties, Manpower training programs, Nuclear materials, Occupational safety and health, Penalties, Radiation protection, Reporting and recordkeeping requirements, Security measures, Spent fuel, Whistleblowing.

For the reasons set out in the preamble and under the authority of the Atomic Energy Act of 1954, as amended; the Energy Reorganization Act of 1974, as amended; the Nuclear Waste Policy Act of 1982, as amended; and 5 U.S.C. 552 and 553; the NRC is adopting the following amendments to 10 CFR part 72.

PART 72 - LICENSING REQUIREMENTS FOR THE INDEPENDENT STORAGE OF SPENT NUCLEAR FUEL, HIGH-LEVEL RADIOACTIVE WASTE AND REACTOR-RELATED GREATER THAN CLASS C WASTE

1. The authority citation for part 72 continues to read as follows:

Authority: Atomic Energy Act secs. 51, 53, 57, 62, 63, 65, 69, 81, 161, 182, 183, 184, 186, 187, 189, 223, 234, 274 (42 U.S.C. 2071, 2073, 2077, 2092, 2093, 2095, 2099, 2111, 2201, 2232, 2233, 2234, 2236, 2237, 2238, 2273, 2282, 2021); Energy Reorganization Act sec. 201, 202, 206, 211 (42 U.S.C. 5841, 5842, 5846, 5851); National Environmental Protection Act

sec. 102 (42 U.S.C. 4332); Nuclear Waste Policy Act secs. 131, 132, 133, 135, 137, 141 148 (42 U.S.C. 10151, 10152, 10153, 10155, 10157, 10161, 10168); sec. 1704, 112 Stat. 2750 (44 U.S.C. 3504 note); Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 549 (2005). Section 72.44(g) also issued under secs. Nuclear Waste Policy Act 142(b) and 148(c), (d) (42 U.S.C. 10162(b), 10168(c), (d)). Section 72.46 also issued under Atomic Energy Act sec. 189 (42 U.S.C. 2239); Nuclear Waste Policy Act sec. 134 (42 U.S.C. 10154). Section 72.96(d) also issued under Nuclear Waste Policy Act sec. 145(g) (42 U.S.C. 10165(g)). Subpart J also issued under Nuclear Waste Policy Act secs. 117(a), 141(h) (42 U.S.C. 10137(a), 10161(h)). Subpart K is also issued under sec. 218(a) (42 U.S.C. 10198).

2. In § 72.214, Certificate of Compliance 1014 is revised to read as follows:

§ 72.214 List of approved spent fuel storage casks.

* * * * *

Certificate Number: 1014.

Initial Certificate Effective Date: May 31, 2000.

Amendment Number 1 Effective Date: July 15, 2002.

Amendment Number 2 Effective Date: June 7, 2005.

Amendment Number 3 Effective Date: May 29, 2007.

Amendment Number 4 Effective Date: January 8, 2008.

Amendment Number 5 Effective Date: July 14, 2008.

Amendment Number 6 Effective Date: August 17, 2009.

Amendment Number 7 Effective Date: December 28, 2009.

Amendment Number 8 Effective Date: May 2, 2012, as corrected on November 16, 2012

(ADAMS Accession No. ML12213A170).

Amendment Number 9 Effective Date: **[INSERT DATE 75 DAYS AFTER PUBLICATION IN THE *FEDERAL REGISTER*].**

SAR Submitted by: Holtec International, Inc.

SAR Title: Final Safety Analysis Report for the HI-STORM 100 Cask System.

Docket Number: 72-1014.

Certificate Expiration Date: May 31, 2020.

Model Number: HI-STORM 100.

* * * * *

Dated at Rockville, Maryland, this 2nd, day of December, 2013.

For the Nuclear Regulatory Commission.

/RA/

Michael R. Johnson,
Acting Executive Director
for Operations.

Amendment Number 9 Effective Date: **[INSERT DATE 75 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER]**.

SAR Submitted by: Holtec International, Inc.

SAR Title: Final Safety Analysis Report for the HI-STORM 100 Cask System.

Docket Number: 72-1014.

Certificate Expiration Date: May 31, 2020.

Model Number: HI-STORM 100.

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Dated at Rockville, Maryland, this 2nd, day of December, 2013.

For the Nuclear Regulatory Commission.

Michael R. Johnson,
Acting Executive Director
for Operations.

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OFC	RPMB/DILR	DILR/FSME	SFST/NMDD	OGC
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OFC	ADM	Tech Ed	DILR/FSME	EDO
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DATE	8/12/13	10/30/13	11/1/13	12/2/13

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