

Document # AFS-18-0027

Delivery via email

Patrick R. Schwab, Contracting Officer Representative

U.S. Department of Energy

Office of Nuclear Energy

1000 Independence Ave., SW

Washington, D.C. 20585

February 2, 2018

**Subject: CLIN 2, Event 4, Revised and Final Submission of Railcar Document Package**

**Reference: Atlas HLRM Railcar Project, Contract DE-NE-0008390**

Dear Mr. Schwab;

Enclosed are the revised and final final Kasgro Rail drawings, structural analysis, bill of materials and dynamic modeling reports for the Atlas and buffer railcars. These include changes for additional AAR EEC modeling requirements, incorporation of AAR S-2044, *Safety Appliances f or Freight Cars*, and the replacement of the ECP brake system. Also enclosed are the final information packages for the Atlas railcar conceptual ballast load and the Atlas test loads. These final document packages are formally submitted for review and approval for invoicing.

The enclosed Atlas railcar document package includes the following files *with revised drawings in italics*:

|  |  |  |
| --- | --- | --- |
| **File Names** | **Kasgro Rail Drawing Number** | **Description** |
| 1155-1.dwg1155-1.pdf | 1155-1 | Car Body Arrangement |
| *1155-2.dwg**1155-2.pdf* | *1155-2* | *Brake Arrangement* |
| *1155-3.edrw**1155-3.pdf* | *1155-3* | *Stencil Arrangement* |
| *1155-4.dwg**1155-4.pdf* | *1155-4* | *End Platform Arrangement* |
| *1155-5.dwg**1155-5.pdf* | *1155-5* | *End Platform Details* |
| 1155-6.dwg1155-6.pdf | 1155-6 | End Platform Details |
| *1155-7.dwg**1155-7.pdf* | *1155-7* | *Air Brake Schematic* |
| 1155-8.dwg1155-8.pdf | 1155-8 | Body Bolster |

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| **File Names** | **Kasgro Rail Drawing Number** | **Description** |
| 1155-9.dwg1155-9.pdf | 1155-9 | Center Plate |
| 1155-10.dwg1155-10.pdf | 1155-10 | Steel Details |
| 1155-11.dwg1155-11.pdf | 1155-11 | Steel Details |
| 1155-12.dwg1155-12.pdf | 1155-12 | Steel Details |
| 1155-13.dwg1155-13.pdf | 1155-13 | Steel Details |
| 1155-14.dwg1155-14.pdf | 1155-14 | Steel Details |
| 1155-15.dwg1155-15.pdf | 1155-15 | Steel Details |
| 1155-16.dwg1155-16.pdf | 1155-16 | Steel Details |
| 1155-17.dwg1155-17.pdf | 1155-17 | Steel Details |
| 1155-18.dwg1155-18.pdf | 1155-18 | Steel Details |
| 1155-19.dwg1155-19.pdf | 1155-19 | Brake Steel Details |
| 1155-20.dwg1155-20.pdf | 1155-20 | Brake Steel Details |
| 1155-21.dwg1155-21.pdf | 1155-21 | Pipe Details |
| 1155-22.dwg1155-22.pdf | 1155-22 | Pipe Details |

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| **File Names** | **Kasgro Rail Drawing Number** | **Description** |
| 1155-23.dwg1155-23.pdf | 1155-23 | Brake Pipes |
| 1155-24.dwg1155-24.pdf | 1155-24 | Steel Details |
| *1155-25.dwg**1155-25.pdf* | *1155-25* | *Hand Brake Details* |
| 1155-26.dwg1155-26.pdf | 1155-26 | Hand Brake Details |
| 1155-27.dwg1155-27.pdf | 1155-27 | Hand Brake Details |
| 1155-28.dwg1155-28.pdf | 1155-28 | Hand Brake Details |
| 1155-29.dwg1155-29.pdf | 1155-29 | Brake Badge Plate |
| 1155-30.dwg1155-30.pdf | 1155-30 | Locking Center Pins |
| *1155-31.dwg**1155-31.[df* | *1155-31* | *Hand Brake Details* |
| 1155-32.dwg1155-32.pdf | 1155-32 | Spring Grouping290 Ton Straight Deck Flat Car |
| *1155-33.dwg**1155-33.pdf* | *1155-33* | *Brake Steel Details* |
| 1155-34.dwg1155-34.pdf | 1155-34 | Camber Diagram |
| 1155-35.dwg1155-35.pdf | 1155-35 | Clearance |
| 1155-36.dwg1155-36.pdf | 1155-36 | Steel Details |

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| **File Names** | **Kasgro Rail Drawing Number** | **Description** |
| 1155-37.dwg1155-37.pdf | 1155-37 | Steel Details |
| 1155-38.dwg1155-38.pdf | 1155-38 | Steel Details |
| 1155-39.dwg1155-39.pdf | 1155-39 | Center Pin Details |
| *1155-40.dwg**1155-40.pdf* | *1155-40* | *Handbrake Arrangement* |
| *1155-41.dwg**1155-41.pdf* | *1155-41* | *Attachment Arrangement* |
| *1155-42.dwg**1155-42.pdf* | *1155-42* | *Sheave Brkts* |
| *1155-43.dwg**1155-43.pdf* | *1155-43* | *HB Steel Details* |
| *1155-44.dwg**1155-44.pdf* | *1155-44* | *Steps* |
| *Atlas Structural Analysis 11-07-17.pdf* | *N/A* | *Atlas 12-Axle Flat Car**S-2043 4.1 Structural Analysis* |
| *1155-BOM Atlas Car.pdf* | *N/A* | *12-Axle Flat**Atlas Cask Car Bill of Material* |
| *Atlas Dyn Modeling Report P-17-021 Rev 12-14-2017.pdf* | *N/A* | *S-2043 Certification: Preliminary Simulations of Kasgro-Atlas**12-Axle Cask Car**Report P-17-021, Revised December 14, 2017* |

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The enclosed buffer railcar document package includes the following files *with revised drawings in italics*:

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| **File Names** | **Kasgro Rail Drawing Number** | **Description** |

|  |  |  |
| --- | --- | --- |
| 1160-1.dwg1160-1.pdf | 1160-1 | General Arrangement110 Ton Straight Deck Flat |
| *1160-2 Rev C.dwg**1160-2 Rev C.pdf* | *1160-2 Rev C* | *Air Brake Arrangement**110 Ton Flat Car* |
| 1160-3.edrw1160-3.pdf | 1160-3 | Stencil Arrangement |
| 1160-4.dwg1160-4.pdf | 1160-4 | Hand Brake Arrangement |
| 1160-5.dwg1160-5.pdf | 1160-5 | Draft Sill Details |
| 1160-6.dwg1160-6.pdf | 1160-6 | Bolster Assembly and Details |
| 1160-7.dwg1160-7.pdf | 1160-7 | Steel Details |
| 1160-8.dwg1160-8.pdf | 1160-8 | Steel Details |
| 1160-9.dwg1160-9.pdf | 1160-9 | Steel Details |
| 1160-10.dwg1160-10.pdf | 1160-10 | Steel Details |
| 1160-11.dwg1160-11.pdf | 1160-11 | Steel Details |
| 1160-12.dwg1160-12.pdf | 1160-12 | Steel Details |
| 1160-13.dwg1160-13.pdf | 1160-13 | Steel Details |
| 1160-14.dwg1160-14.pdf | 1160-14 | Steel Details |

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| **File Names** | **Kasgro Rail Drawing Number** | **Description** |

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| --- | --- | --- |
| 1160-15.dwg1160-15.pdf | 1160-15 | Steel Details |
| 1160-16.dwg1160-16.pdf | 1160-16 | Deck Plate |
| 1160-17.dwg1160-17.pdf | 1160-17 | Steel Details |
| 1160-18.dwg1160-18.pdf | 1160-18 | Steel Details |
| 1160-19.dwg1160-19.pdf | 1160-19 | Hand Brake Details |
| 1160-20.dwg1160-20.pdf | 1160-20 | Brake Badge Plate |
| 1160-21.dwg1160-21.pdf | 1160-21 | Hand Brake Steel Details |
| 1160-22.dwg1160-22.pdf | 1160-22 | Hand Brake Details |
| 1160-23.dwg1160-23.pdf | 1160-23 | Air Brake Steel Details |
| 1160-24.dwg1160-24.pdf | 1160-24 | Air Brake Steel Details |
| 1160-25.dwg1160-25.pdf | 1160-25 | Pipe Details |
| 1160-26.dwg1160-26.pdf | 1160-26 | Pipe Details |
| 1160-27.dwg1160-27.pdf | 1160-27 | Pipe Details |
| 1160-28.dwg1160-28.pdf | 1160-28 | Brake Pipe Details |
| 1160-29.dwg1160-29.pdg | 1160-29 | Air Brake Details |

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| **File Names** | **Kasgro Rail Drawing Number** | **Description** |

|  |  |  |
| --- | --- | --- |
| 1160-30.dwg1160-30.pdf | 1160-30 | Air Brake Details |
| 1160-31.dwg1160-31.pdf | 1160-31 | Air Brake Details |
| 1160-32.dwg1160-32.pdf | 1160-32 | Air Brake Steel Details |
| 1160-33.dwg1160-33.pdf | 1160-33 | Air Brake Steel Details |
| 1160-34.dwg1160-34.pdf | 1160-34 | Pipe Details |
| 1160-35.dwg1160-35.pdf | 1160-35 | Camber Diagram |
| 1160-37.dwg1160-37.pdf | 1160-37 | Pipe Details |
| 1160-40.dwg1160-40.pdf | 1160-40 | Ballast Wt Arrangement |
| 1160-41.dwg1160-41.pdf | 1160-41 | Dummy Wt |
| 1160-42.dwg1160-42.pdf | 1160-42 | Dummy Wt |
| 1160-43.dwg1160-43.pdf | 1160-43 | Dummy Wt |
| 1160-44.dwg1160-44.pdf | 1160-44 | Locking Center Pins |
| 1160-45.dwg1160-45.pdf | 1160-45 | Steel Details |
| *Buffer Structural Analysis 11-03-17.pdf* | *N/A* | *Atlas 4-Axle Flat Car**Preliminary Loading Analysis**60 Ft 110-Ton Flatcar**For S-2043 Service* |

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| **File Names** | **Kasgro Rail Drawing Number** | **Description** |

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| --- | --- | --- |
| *1160-BOM Buffer Car* | *N/A* | *4-Axle Flat Atlas Buffer Railcar Bill of Material* |
| *Buffer Dyn Modeling Report P-17-023 Rev 11-20-2017.pdf* | *N/A* | *S-2043 Certification: Preliminary Simulation of Kasgro Buffer Railcar, Report P-17-023, Revised November 20, 2017* |

The enclosed Atlas railcar conceptual ballast load document package includes the following files:

|  |  |  |
| --- | --- | --- |
| **File Names** | **AFS Document Number** | **Description** |

|  |  |  |
| --- | --- | --- |
| DWG-3018955-000.zipDWG-3018955-000.pdf | DWG-3018955-000 | Atlas Railcar Ballast Load Conceptual Drawing |
| CALC-3018954-000.docxCALC-3018954-000.pdf | CALC-3018954-000 | Atlas Railcar Conceptual Ballast Load Structural Calculation |

The enclosed Atlas test loads document package includes the following files:

|  |  |  |
| --- | --- | --- |
| **File Names** | **AFS Document Number** | **Description** |

|  |  |  |
| --- | --- | --- |
| EIR-3018494-000.docxEIR-3018494-000.pdf | EIR-3018494-000 | Atlas Railcar Test Load Design Information |

This document supports the completion of referenced contract, page G-4, item CLIN 2, Event 4.

For questions and comments, contact me at 704-805-2994 or at mark.denton@areva.com .

Best Regards,



Mark A. Denton

Sr. Project Manager

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