### Mechanical Handling Data Sheet

**Top Running, Double Girder**

**Data Sheet No:** 24590-HLW-M00-HPH-00063  
**Plant Item No.:** 24590-HLW-M00-HPH-CRN-00002  
**Rev.:** 3

**Project No.:** 24590  
**System No.:** HPH  
**Building No.:** 30

**Quality Level:** CM  
**Seismic Criteria:** SC-II  
**Function:** Canister Handling and Maintenance Activities

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### DESIGN CRITERIA

- **Design Life:** 40 years
- **Safety Classification:** APC

### OPERATING ENVIRONMENT

<table>
<thead>
<tr>
<th>Condition</th>
<th>In-Cave</th>
<th>Out-Cave</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Temperature</strong> deg F</td>
<td>Min</td>
<td>Max</td>
</tr>
<tr>
<td></td>
<td>59</td>
<td>113</td>
</tr>
<tr>
<td><strong>Relative Humidity</strong> %</td>
<td>0</td>
<td>70</td>
</tr>
<tr>
<td><strong>Radiological Dose</strong></td>
<td>gamma mrad/hr</td>
<td>neutron mrad/hr</td>
</tr>
<tr>
<td></td>
<td>▶4.0E+4</td>
<td>▶10</td>
</tr>
<tr>
<td><strong>Radiological Classification</strong></td>
<td>R5</td>
<td>R3</td>
</tr>
<tr>
<td><strong>Contamination Classification</strong></td>
<td>C5</td>
<td>C3</td>
</tr>
</tbody>
</table>

### CRANE REQUIREMENTS

- **Type of Crane:** Top Running Double Girder Electric Overhead Traveling Crane
- **Service Information:** CMAA 70-2000, Class E  
- **Capacity:** 6 Ton  
- **Material Handled:** Canisters, Auxiliary Hoist, N/A
- **No. of Cranes Required:** 1  
- **ASCE Rail Type or Beam Size:** 104 lb/lyd Crane Rail

### OPERATING CHARACTERISTICS AND FREQUENCY OF MOVEMENT

- **Hoist Range of Lift (F) - (G):** No. lifts/day  
- **Average Moves - Bridge:** 1/2 Runway Length, Moves/day  
- **Average Moves - Trolley:** 3/4 Bridge Length, Moves/day

### CRANE DIMENSIONS AND ELEVATIONS

- **Lowest Obstruction Elevation:** 48'-0"  
- **Shield Door Corner Obstruction Elevation:** 47'-6"
- **Trolley Rail Elevation:** 44'-0" NOMINAL  
- **Bridge Rail Elevation:** 42'-4.5"  
- **Low Hook Elevation:** 3'-0"
- **Side Approach - hoist center line to South Rails:** 3'-4" MAXIMUM  
- **Side Approach - hoist center line to North Rails:** 3'-4" MAXIMUM
- **Distance from Grid line "R" to truss face of South Wall:** 2'-0" IN/OUT CAVE
- **Distance from hoist center line to end-truck East bumper:** 5'-7"
- **Distance from hoist center line to end-truck West bumper:** 6'-10 1/2"
- **Distance from hoist center line to In-Cave East Wall:** 5'-7"
- **Distance from hoist center line to CMA West Wall:** 7'-6"
- **Distance from Grid Line "15" to inside face of East Wall:** 188'-7"  
- **Total Inside Dimension inside face of East Wall:** 45'-4.5"  
- **Runway Rails Span:** 19'-4"  
- **Shield Door Corner Obstruction:** 0'-5"

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**Signed and Approved:**

- [Signature 1]  
- [Signature 2]  
- [Signature 3]  
- [Signature 4]

**Date:** 09/08/03  
**Doc Number:** 24590-HLW-M00-HPH-00063  
**REV:** 3  
**Page:** 1 of 3
DRIVE TYPE SPEED AND HORSEPOWER

<table>
<thead>
<tr>
<th>Drives</th>
<th>Drive Type</th>
<th>Speed</th>
<th>Horsepower</th>
<th>Slow (ft/min)</th>
<th>Fast (ft/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Hoist Drive Type</td>
<td>Flux Vector</td>
<td>Variable 0 - 25</td>
<td>12 HP</td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td>Recovery Hoist Drive Type</td>
<td>Single Speed</td>
<td>Single Speed</td>
<td>7 HP</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Main Bridge Drive Type</td>
<td>VFD</td>
<td>Variable 0 - 50</td>
<td>4 HP</td>
<td>5</td>
<td>60</td>
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<tr>
<td>Recovery Bridge Drive Type</td>
<td>Single Speed</td>
<td>Single Speed</td>
<td>1 HP</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Main Trolley Drive Type</td>
<td>VFD</td>
<td>Variable 0-25</td>
<td>1.5 HP</td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td>Recovery Trolley Drive Type</td>
<td>Single Speed</td>
<td>Single Speed</td>
<td>0.75 HP</td>
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<td>5</td>
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<tr>
<td>Powered Hook</td>
<td>DC Motor</td>
<td>Fixed</td>
<td>0.05 HP</td>
<td>1-2</td>
<td></td>
</tr>
</tbody>
</table>

CONDUCTOR TYPE

- Bridge: Cable Reel
- Trolley: Cable Track

CONTROLS

- Method of Control: Manual
- Location of Control: Dedicated Crane Control Room/ Window Station/ Crane Maintenance Area
- Type of Control Enclosure: NEMA 4X or IP 66

ELECTRICAL REQUIREMENTS

- Item: Volts / Phase / Hertz
  - Motor: 480 VAC / 3 Phase / 60 Hz
- Special Wiring Conditions: National Electric Code

MAINTENANCE REQUIREMENTS

- Construction: Modular for ease of assembly / dismantling
- Modulartization: Heaviest Modular item except bridge beams / end trucks / must be < 5 tons.
- Retrieval: Crane must be retrievable / Hoist must be retrievable
- Decontamination: Crane and hoist needs to be decontaminable and minimize cracks and crevices that can trap debris

ADDITIONAL REQUIREMENTS

1. Motors and electrical cabinets etc. to be sealed to withstand occasional washdown during decontamination.
2. Four bridge mounted and two trolley mounted cameras capable of pan, zoom, iris and tilt and one hook deployed camera including lighting, pan, tilt, zoom and iris to view cable floors. The Buyer supplies the cameras. Seller provides mounts.
3. All cranes shall be designed to allow operator positioning to within +/- 3/8".
4. Four crane mounted lights as well as light supplied by cameras.
5. Must be able to hold and control suspended payload without mechanical braking for sustained periods.
6. Must not drop load during any single random or common mode electrical failure.
7. Must be recoverable by remote means after any specified single random or common mode failure by use of redundant drives in conjunction with cable reel where necessary.
8. Power supply is required at hook for crane held tools.
9. Motor horsepower estimated for plant electrical load sizing. Seller to provide.
10. This drawing provided basic outlines, design objectives, and bounding dimensions to contracted design or fabrication supplier(s) and shall not be used to confirm the as built WTP structure, system or component identified herein. See vendor information for final configuration provided in conformance to purchase order OL-POA-M-NKG-00002.

Revision 1 changes: Changed additional requirements, drives, and description.
Revision 2 changes: Revised based on 24590-HLW-DCA-P-03-002 Rev 0, and editorial changes. Changed recovery drive type; was VFD.
Revision 3 changes: Safety Classification changed to APC, Quality Level changed to CM; Calc ref deleted; Dimension K & M ammended to include bumper extensions that allow bumpers to engage on cave wall, IAW 24590-HLW-ACA-M-55-00031.