DC Cook Turbine Project

“Reducing Costs to Keep the Nuclear Power Plants Viable”

Steve Mims (DC Cook)
R3 Workshop
Blackstone Hotel - Chicago, IL
Outline

• Background
• Project and Service Update
  – DC Cook Turbine Casings
  – Obsolete Equipment Projects
  – DAW Minimization
• Questions
Background

Disposition of Potentially Contaminated DC Cook Turbine Casings

1,515,000 pounds of turbine casing material was dispositioned thru monitoring, cutting, and decontamination methods to release & recycle over 90% of the material resulting in significant savings to the Cook plant.
Legacy Contaminated Turbine Casing at DC Cook
**Project: Disposition of DC Cook Turbine Casings**  
(Potentially Contaminated)

**Six Casings for Processing/Disposition – 1,515,000 Pounds**

<table>
<thead>
<tr>
<th>Description</th>
<th>Qty</th>
<th>Length (ft)</th>
<th>Width (ft)</th>
<th>Height (ft)</th>
<th>Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inner Casing A – Upper Half</td>
<td>1</td>
<td>30’8”</td>
<td>16’5”</td>
<td>11’10”</td>
<td>155,000</td>
</tr>
<tr>
<td>Inner Casing B – Upper Half</td>
<td>1</td>
<td>30’8”</td>
<td>16’5”</td>
<td>11’10”</td>
<td>155,000</td>
</tr>
<tr>
<td>Inner Casing C – Upper Half</td>
<td>1</td>
<td>30’8”</td>
<td>16’5”</td>
<td>11’10”</td>
<td>155,000</td>
</tr>
<tr>
<td>Lower Casing A with Blade Carrier &amp; Shipping Frame</td>
<td>1</td>
<td>30’8”</td>
<td>20’8”</td>
<td>15’</td>
<td>350,000</td>
</tr>
<tr>
<td>Lower Casing B with Blade Carrier &amp; Shipping Frame</td>
<td>1</td>
<td>30’8”</td>
<td>20’8”</td>
<td>15’</td>
<td>350,000</td>
</tr>
<tr>
<td>Lower Casing C with Blade Carrier &amp; Shipping Frame</td>
<td>1</td>
<td>30’8”</td>
<td>20’8”</td>
<td>15’</td>
<td>350,000</td>
</tr>
</tbody>
</table>

Eliminated Radioactive Waste and saved over $2M
After months of planning and analysis the site awarded a contract to both Barnhart for transport and UniTech for disposition. The barge departed from St. Joe, Michigan on Sunday, September 10th at 1:00 p.m.

The barge traveled through the Mississippi, Ohio, and Tennessee navigable river systems (~ 1200 miles).
Barge Arrival – Oak Ridge, TN

- The barge arrived at 2:00 a.m. on Wednesday, September 27th. **17 ½ days** in transit.

- The barge averaged **6 mph** but never exceeded **8 mph**.
Barge Arrival – (Continued) Close Up
Barge – Unloading (Continued)

- Barnhart used a Goldhofer to unload the casings.
- It took 2 full days to unload and stage all 6 casings from barge to staging area.
Radiological Monitoring Plan

• UniTech preformed 100% direct radiological survey of the upper and lower casing in accordance with UniTech Procedure RP-062, NRC IE Circular 81-07, & Reg. Guide 1.86.

• All areas of the casings were 100% surveyed and free released prior to cutting for final disposition.
• UniTech also used a Canberra (ISOC) counting system to survey the casings and verify the materials met release standards. (Double check and verification of frisking procedure)

• After sectioning and cutting the casings all materials were resurveyed with the ISOC system prior to disposition
All 3 upper casings were cut up for Recycle by 2:30 a.m. on October 5th. (Less that 72 hours for processing the 465,000 pounds of upper casings).
The Final Disposition breakdown is as follows:

- **LLRW**: 0% of material or 0 pounds (100% Free Released)
- **Recycle**: 98% of material or 1,457,430 pounds
- **80+% savings** over Radioactive Waste Burial - $2,000,000+
  plus the following benefits:
  
  ➢ Saved volume of radioactive waste, both environmental, political and regulatory benefits to recycle vs radioactive waste.
  ➢ Eliminated Risk of onsite cutting and rigging.
  ➢ Barge to TN cheaper than Cut up and Rail to Utah.
Additional Savings at DC Cook

Further reduce Radioactive Waste $’s

Sort waste into categories (tools/equipment (recycle), BSFR level, items for decontamination, potential for free release /scrap value.

Processing DC Cook Waste – 85% BSFR
Saving $0.65/lb + (30-40% Savings)
“Reducing Costs to keep plants viable”
Questions