

PART I - DESCRIPTION

WBS Number: 252	Title: Neutral Beamline Relocation
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<u>Description</u>	
<u>General Description of Work to be Performed:</u>	
<p>NCSX will adopt the PBX-M Neutral Beam System.</p>	
<p>NCSX require relocating and reorienting 2 of 4 Neutral Beamlines to a more tangential injection angle.</p>	
<p>This work will require removal and relocation of four Neutral Beamlines prior to any major Vessel Modification Phase.</p>	
<p>The above work requires removing a designated Beamline (weight =7.5 Tons) from the PBX-M Test Cell to a suitable storage location (e.g., D-Site NB Power Conversion Building) using the Perry Lift Rig. At this storage location, refurbishing work will be performed.</p>	
<p>The Beamline base-plates will be moved to the new location. The required Ion Source power junction box and cables located under the Platform will be refabricated for new base-plate location. All control and diagnostic cables will be reinstalled. The air, water, cryo, and vacuum lines will be extended to the new location. The Beamline will then be lifted from its storage location, and placed on its base plate at the new location. During this work, the methodologies and procedures developed during the previous reorientation (1983 vessel conversion from PDX to PBX) will be applied.</p>	
ASSUMPTIONS (See Fig.1)	
<ol style="list-style-type: none">1. All NB cable and hardware on the Test Cell walls will remain and survive TestCell Cleanup.2. Only the cable runs from the Arc Room to the Beamlines will be replaced.3. The orientation of the Torus will be selected so as to minimize neutral Beam installation costs combinations.	
<u>Description of Existing Equipment/Facilities to be Reused:</u>	
<p>PBX-M Neutral Beamlines.</p>	
<u>Description of Major Modifications Required to Existing Equipment/Facilities:</u>	
<p>Relocate a designated Beamline to a suitable port and position at a specified injection angle.</p>	

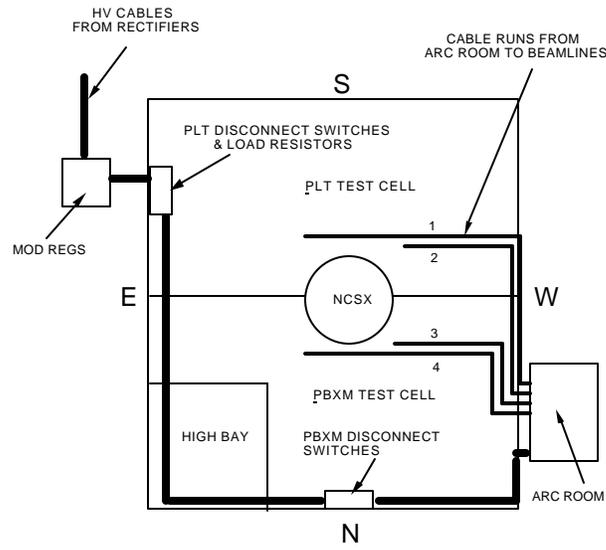


Fig.1 Existing Neutral Beam Cable Route through the Test Cell to the Arc Room on the basement Level. This WBS costing assumes the following:

1. All NB cable and hardware on the Test Cell walls will remain and survive Test Cell Cleanup.
2. Only the cable runs from the Arc Room to the Beamlines will be replaced.
3. The orientation of the Torus will be selected so as to minimize Neutral Beam installation costs need to be replaced.

The PLC's that control the Neutral Beams (ISSC), and Pellet Injector (GE – Series Six) and Neutral Probe Beam (GE – Series Three) need to be replaced.

The other work involves maintenance, repair, and testing of the Neutral Beam Power, Vacuum, Cryogenic, Water, Air, Instrumentation, PLC Control, Computer Control, Computer Archiving, and Diagnostic Subsystems.