

**NCSX Conceptual Design Cost Estimate Summary Form  
(Attachment 1a)**

**SUMMARY DESCRIPTION**

<b>WBS Number: 35</b>	<b>Title: Profile Diagnostics</b>
<b>Originator: Dave Johnson</b>	
<b><u>Description</u></b>	
<p>This WBS element covers diagnostics required to provide spatial profile information at several times, typically every 5-10 msec, for electron density and electron and ion temperature, for the magnetic field direction, and for the toroidal and poloidal rotation. These kinetic profiles provide the information needed to characterize and understand local transport and stability issues.</p> <p>A variety of diagnostic techniques will be used. This WBS is responsible for the vacuum interface, including windows, shutters, valves or electrical feed-thrus. Responsibility also includes sensors, mounting structures and sensor cabling near the vacuum vessel. Sensor electronics and racks are also included. Other WBS units are responsible for field cabling, rack terminal blocks, rack AC power and grounding, and data acquisition hardware. Some of the techniques may require active probing with a laser beam or diagnostic neutral beam. These active probes are also the responsibility of this WBS.</p> <p>For Phases 1 and 2, there are no diagnostics planned in this category.</p> <p><u>Description of Existing Equipment/Facilities to be Reused:</u> <b>None.</b></p> <p><u>Description of Major Modifications Required to Existing Equipment/Facilities:</u> <b>None.</b></p>	

**Date: 9/15/03**