## Attchment-1 Plan for NCSX Vacuum Vessel Manufacturing Study (S-04284-F)

Activities	Nov.	Dec.				20	2002/Jan.						
		30 3	7 1	10 14	17 2	1 24	28 31	4 7	11	14 1	8 21 2	5 28	31
1) Review and recommendation on manufacturing processes		←	-			+	<b>→</b>			İ			
Comparative study on manufacturing procedures, including press forming, explosive forming, casting process and machining process, in consideration of the required performances for vacuum and permeability, manufacturability (incl. Achievable tolerances, etc.) and cost effectiveness.													
2) Identification of design change			+		<u> </u>	+			<b></b>	-			
Based on the above activity, the design change will be identified for the following issues;  a) Material for the vessel b) Strength required for the port reinforcement c) Others: Reliability of sector flanges Accessibility for internal components													
3) Proposal on R&D and prototype activities								_			-		$\Box$
R&D items to reduce technical risks will be identified for our proposed manufacturing process, and the budgetary cost and schedule of the R&D and prototype activities will be estimated.													
4) Estimation of cost and schedule for production of vessel						-					$\rightarrow$	1	
Budgetary cost and schedule for the vessel will be estimated, and key elements to the cost will be identified.		(Checki	ng the	e extracted	I CAD Drawi	ings)							
5) C&R of production specification and proposal on appropriate changes	;	_	-								<b>&gt;</b>		
The draft specification for the vessel will be checked and reviewed.  Main focus will be on the followings:  a) Welding procedures and inspections, related to the standards; b) Interface between the PPPL and the seller, c) Additional items required for the build-to-print, d) The required tolerances.													
Submitted reports to PPPL												FR delivery	A enix of
SR : Status Report ER : Final Report		SR 12/5			SR 12/19					SR 1/16	Finalization of FR	from MHI a	