出國報告審核表

出國報告名稱：洽訪核四廠龍門計畫 I009C 合約廠商及 E014 合約廠商執行進度查核及辦理稽催		
出國人姓名(2人以上，以1人為代表)	職稱	服務單位
謝勝鎰	一般工程師	核能火力發電工程處
出國類別	☐考察☐進修☐研究☐實習 ☑其他 洽公 （例如國際會議、國際比賽、業務接洽等）	
出國期間：97 年 10 月 30 日至 97 年 11 月 5 日	報告繳交日期：97 年 12 月 22 日	

出國計畫主辦機關審核意見

☑1.依限繳交出國報告

☑2.格式完整（本文必須具備「目地」、「過程」、「心得」、「建議事項」）

☑3.無抄襲相關出國報告

☐4.內容充實完備.

☐5.建議具參考價值

☐6.送本機關參考或研辦

☐7.送上級機關參考

☐8.退回補正，原因：☐不符原核定出國計畫 ☐以外文撰寫或僅以所蒐集外文資料為內容 ☐內容空洞簡略或未涵蓋規定要項 ☐抄襲相關出國報告之全部或部分內容 ☐電子檔案未依格式辦理 ☐未於資訊網登錄提要資料及傳送出國報告電子檔

☐9.本報告除上傳至出國報告資訊網外，將採行之公開發表：

☐辦理本機關出國報告座談會（說明會），與同人進行知識分享。

☐於本機關業務會報提出報告

☐其他_____

☐10.其他處理意見及方式：

說明：

一、各機關可依需要自行增列審核項目內容，出國報告審核完畢本表請自行保存。

二、審核作業應儘速完成，以不影響出國人員上傳出國報告至「政府出版資料回應網公務出國報告專區」為原則。

報告人	審核人					
謝勝鎰 97.12.22	單位主管	曾惠美 97.12.22	主管處主管	賴宏昆 97.12.22	總經理	徐永華 97.12.22
					副總經理	黃憲章 97.12.23
						施弘基 97.12.24

行政院及所屬各機關出國報告提要

出國報告名稱：洽訪核四廠龍門計畫 I009C 合約廠商及 E014 合約廠商執行進度查核及辦理稽催

頁數 22 含附件：■是□否

出國計畫主辦機關/聯絡人/電話：

台灣電力公司/核能火力發電工程處/(02)23910241

出國人員姓名/服務機關/單位/職稱/電話：

謝勝鎰/台灣電力公司核能火力發電工程處/通霄計畫採購室/一般工程師/(02)23229448

出國類別：□1 考察□2 進修□3 研究□4 實習■5 其他(洽公)

出國期間：97/10/30～97/11/5　　出國地區：新加坡、日本

報告日期：97 年 12 月 22 日

分類號/目

關鍵詞：

內容摘要：(二百至三百字)

核四廠龍門計畫一、二號機控制閥合約(8749311I009C0)係由新加坡 Emerson Process Management Asia Pacific Private Limited 公司執行履約及承製設備，截至目前廠商仍有大部分強制性備品迄今尚未交運，爲避免因該備品交運延誤影響相關設備之安裝及試運轉工作，故派員赴製造廠就其執行進度與交運等工作進行查核與稽催。另龍門計畫一、二號機 345KV 電力電纜及附屬設備合約（8749311E01400）係由日本 J-Power Systems Corporation 公司執行履約及承製設備，截至目前二號機設備尚未交運，爲避免影響核四整體工進，故派員赴廠商執行進度查核與稽催。本次奉派洽訪合約廠商，除實地瞭解該公司之設備製造、交運作業規劃等現況外，並與廠商面對面就合約履約相關議題作討論及溝通，期能有助於各該合約設備交貨、履約問題之解決，以確保龍門計畫發電工程之順利執行。

出國報告（出國類別：洽公）

洽訪核四廠龍門計畫 I009C 合約廠商及 E014 合約廠商執行進度查核及辦理稽催

服務機關：台灣電力公司核能火力發電工程處

姓名職稱：謝勝鎰／一般工程師

派赴國家：新加坡、日本

出國期間：97 年 10 月 30 日至 97 年 11 月 5 日

報告日期：97 年 12 月 22 日

目　　錄

壹、出國任務

一、龍門計畫一、二號機控制閥合約(8749311I009C0)係由新加坡 Emerson Process Management Asia Pacific Private Limited 公司執行履約及承製設備，截至目前廠商仍有大部分強制性備品迄今尚未交運，為避免因該備品交運延誤影響相關設備之安裝及試運轉工作，故派員赴製造廠就其執行進度與交運等工作進行查核與稽催。。

二、另龍門計畫一、二號機 345KV 電力電纜及附屬設備合約（8749311E01400）係由日本 J-Power Systems Corporation 公司執行履約及承製設備，截至目前二號機設備尚未交運，為避免影響核四整體工進，故派員赴廠商執行進度查核與稽催。

貳、出國行程

97/10/30～97/10/30	往程（台北 → 新加坡）
97/10/31 ～97/10/31	洽訪龍門計畫一、二號機控制閥合約（8749311I009C0）廠商新加坡艾默生過程管理亞太區私人有限公司（Emerson Process Management Asia Pacific Private Limited）查核設備製造情形及稽催
97/11/01～97/11/01	交通（新加坡 → 東京）
97/11/02～97/11/04	洽訪龍門計畫第一、二號機 345KV 電力電纜及附屬設備合約（8749311E01400）廠商日本 J-Power Systems Corporation 公司查核合約執行情形及稽催
97/11/05～97/11/05	返程（東京 → 台北）

共計 7 天

參、洽辦業務辦理情形

一、洽訪龍門計畫第一、二號機控制閥合約（8749311I009C0）廠商新加坡 Emerson Process Management Asia Pacific Private Limited 公司查核設備製造情形及稽催。

（一）此次洽訪 Emerson Process Management Asia Pacific Private Limited 係由該公司 Mr. Lim Ping, Senior Project Engineer/Project Management 及 Mr. Vincent Lam, Manager/AP Special Products Group（如附件 1）負責接洽。

（二）本合約所採購之龍門計畫一、二號機各式控制閥，截至目前均已交運至工地，僅剩強制性備品則尚有部分尚未交運（如附件 2）。首先就尚未交運之強制性備品請其說明目前製造情形並促其儘速製交。Mr. Lim Ping 表示因該部分強制性備品非屬一般標準品，均需特別訂製，故製造期程較長，約需 20 週，預計 2009 年 4 月將可交運。

（三）有關 Mr. Lim Ping 要求：「Emerson 公司已就尚未交運備品提出交運期程之聲明，其是否可據以請領備品款乙事。」則當面答覆：「由於與合約規定之付款條件不符，除非就此部分先行修約，否則實無法同意。」Mr. Lim Ping 表示了解並將遵照合約辦理交運後再行請款。

（四）有關本合約尚未解決之 RIR（Receiving Inspection Record）項目，Mr. Lim Ping 表示該公司將在其台灣代理商—巨路國際股份有限公司的協助下全力配合施工處的需求辦理，以求儘快處理未解決之 RIR 項目（詳如附件 3）。

（五）有關本合約尾款部分，Mr. Lim Ping 表示將於前述備品交運完

成及 RIR 項目全部解決後會儘速提出相關文件辦理請款。

二、洽訪龍門計畫第一、二號機 345KV 電力電纜及附屬設備合約（8749311E01400）廠商日本 J-Power Systems Corporation 公司查核合約執行情形及稽催。

（一）本次洽訪 J-Power Systems Corporation 係由該公司國際事業部之 Mr. katsuya Masuike, Manager/Project Management Group、Mr. Kazunori Suzuki, Assistant Manager/Project Management Group 及 Mr. Shoji Mashio, Senior Engineer/Project Engineering Department（如附件 4）負責接洽。

（二）本合約所採購龍門計畫一、二號機組 345KV 電力電纜及附屬設備，其中一號機部分已於 2008 年 3 月 19 日交運至工地，並於 2008 年 6 月 5 日完成電力電纜鋪設工作，及配合現場施工進度於 7 月 24 日完成相關測試工作。而二號機部分，合約規定 2009 年 7 月 16 日須完成電力電纜鋪設工作。首先就尚未交運之二號機設備部分，請其說明目前備料、製造及交運規劃情形並促其務必依照合約規定時程完成交貨。Mr. Shoji Mashio 表示其中二號機預計於 2008 年 11～12 月開始備料製造，2009 年 2～3 月設備交運至工地，3 月中開始電力電纜鋪設工作，7 月中可完成電力電纜鋪設工作（詳如附件 5，摘要如下表）。

二號機 345KV 電力電纜	開始日期	完成日期
附屬設備備料	2008/10/08	2009/01/05
電力電纜備料	2008/10/17	2008/11/15
附屬設備製造	2008/10/23	2009/02/04
電力電纜製造	2008/11/01	2009/01/29

電力電纜測試	2009/01/30	2009/02/02
附屬設備測試	2009/02/05	2009/02/08
電力電纜交運前檢驗	2009/02/10	2009/02/12
電力電纜交運至工地	2009/02/13	2009/03/05
附屬設備交運前檢驗	2009/02/16	2009/02/18
附屬設備交運至工地	2009/02/19	2009/03/03
進駐工地鋪設電力電纜	2009/03/11	2009/07/16

（三）有關 Mr. Shoji Mashio 詢及二號機相關 GIS 之確定完成日期，俾便其排程時，則請其仍先依合約規定時程辦理。屆時若需配合變更電力電纜工地接收測試工作時程時，雙方再視情況進行協商。

（四）有關一號機部分，J-Power Systems Corporation 雖已交運至工地並完成電力電纜鋪設工作，但因該實際交運設備，部分項目之規格、數量與合約所訂內容不一致，影響設備款之支付。就此部分，Mr. Kazunori Suzuki 表示將於近期正式提出契約變更之請求，並透過其在台之代理商—台灣住友商事股份有限公司協助處理契約變更相關聯繫事宜。

肆、國外公務之心得與感想

一、在洽訪 Emerson 時，恰巧遇到兩位該公司天津廠工程師，兩人年紀均是 26 歲，都是其大學剛畢業就被招聘進來的。經請教 Mr. Vincent Lam 後方瞭解：原來是近年來，因該公司設在日本千葉縣佐倉的工廠，由於現在日本當地年輕人似乎對於 Valve 設計製造工作之就職意願低，招不到年輕工程師，資深工程師退休後，公司的設計、製造等核心技術無法傳承，整廠的業務能力隨即受到影響。該公司爲了因應此種情形，遂投下巨資於大陸天津設廠，並招聘大批學校剛畢業之工科學生，俾技術得以傳承。Emerson 寧可閑置日本廠，另行投下巨資在大陸設廠，或許間有其市場考量，但不可否認核心技術的存續仍是該公司一個重要的考量。於此，非常高興本公司最近一、兩年能招進了許多優秀的年輕工程或其他管理方面人員，衷心期望公司的核心技術得以傳承。

二、此次洽公，感到新加坡的市容較 4 年前洽訪時又有明顯的變化，除新增了許多地標性的建築外、處處可見建設工地(其中尤以預定 2009 年底落成的 CASINO 爲代表)。另外於洽訪日本，J-Power 國外部人員表示：日本經濟從 2000 年以後改善許多，連帶使得其雖屬國外事業部門人員，亦不得不考慮開始準備應付日本國內市場及照顧國內客戶之種種需求。反觀國內，進步的腳步似乎慢了許多。

伍、對本公司之具體建議

一、針對 Emerson 尚未交之備品及尚未解決之 RIR 項目，將建議予以列入「龍門計畫外購設備合約涉及爭議、待處理及修約事項處理追蹤一覽表」，持續定期追綜及視情形稽催，直到其全部交運及改善完成爲止。

二、J-Power 一號機交運及安裝情形及履約配合度均良好，而二號機因其係預定於 2009 年 1 月方開始製造、測試，故建議可視需要屆時於 2009 年 2 月派員前往查核其製造履約情形。

（由左至右）Mr. Vincent Lam、職謝勝鎰、Mr. Lim Ping。

Attachment C: WRONG/SHORT SHIPMENT SPARE PARTS LIST

	Item in TDS	Item in Contract	Tag#	Description	P/N	Qty Req for Unit 1	Qty Req for Unit 2	Total
Updated on 18th Aug	004-6	2	1B21-ABV-5064A 1B21-ABV-5064B 1B21-ABV-5064C	Packing Set	RPACKX00182	1	1	2
				Note: To replace (RPACKX00172) already sent for each unit				
	007	3	1B21-ABV-5094	Packing Set	RPACKX00182	1	1	2
				Note: To replace (RPACKX00172) already sent for each unit				
	010	5	1N11-ABV-6011 2N11-ABV-6011	Packing ring	1P3905X0172	3	3	6
				Note: 1 Packing set (containing 1 qty of 1P3905X0172 and 4 qty of 18A0908X012) already sent for each unit				
	219-20	95	1P24-ACV-5038A 1P24-ACV-5038B	Gasket Set	RGASKETX242	1	0	1
				Note: To replace (RGASKETX172) already sent for unit 1				
	268	122	1P62-ACV-5025	Gasket set	RGASKETX252	1	1	2
				Note: To replace Gasket Set (RGASKETX182) already sent for both Unit				
	271-2	125	1P62-ACV-5052A 1P62-ACV-5052B	Gasket Set	RGASKETX252	1	1	2
				Note: To replace Gasket Set (RGASKETX182) already sent for both Unit				
	185-7	74	1N23-ACV-5728A 1N23-ACV-5728B 1N23-ACV-5728C	Gasket	14B1081X012	2	2	4
				Note: 1 Gasket 14B1081X012 already sent for both Unit				
	100	236	1P62-ABV-5008	Packing Ring	18A0908X012	4	4	8
				Packing Ring	1P3805X0172	4	4	8
				Note: To replace packing Set (RPACKX00172) already sent for both units				
	290-2	137	1N23-ABV-5735A 1N23-ABV-5735B 1N23-ABV-5735C	Packing ring	1P3905X0172	4	4	8
				Packing ring	18A0908X012	4	4	8
				Note: To replace packing Set (RPACKX00182) already sent for both units				
	293-4	138	1N23-ABV-5740A 1N23-ABV-5740B	Packing ring	1P3905X0172	4	4	8
				Packing ring	18A0908X012	4	4	8
				Note: To replace packing Set (RPACKX00172) already sent for both units				

附件 2

295-6	139	1N23-ABV-5741A 1N23-ABV-5741B	Packing ring Packing ring	1P3905X0172 18A0908X012	4 4	4 4	8 8
			Note: To replace packing Set (RPACKX00172) already sent for both units				
297-9	140	1N23-ABV-5742A 1N23-ABV-5742B 1N23-ABV-5742C	Packing ring Packing ring	1P3905X0172 18A0908X012	4 4	4 4	8 8
			Note: To replace packing Set (RPACKX00172) already sent for both units				
300-02	141	1N23-ABV-5743A 1N23-ABV-5743B 1N23-ABV-5743C	Packing ring Packing ring	1P3905X0172 18A0908X012	4 4	4 4	8 8
			Note: To replace packing Set (RPACKX00172) already sent for both units				
303-5	142	1N23-ABV-5744A 1N23-ABV-5744B 1N23-ABV-5744C	Packing ring Packing ring	1P3905X0172 18A0908X012	4 4	4 4	8 8
			Note: To replace packing Set (RPACKX00172) already sent for both units				
306-8	143	1N23-ABV-5745A 1N23-ABV-5745B 1N23-ABV-5745C	Packing ring Packing ring	1P3905X0172 18A0908X012	4 4	4 4	8 8
			Note: To replace packing Set (RPACKX00172) already sent for both units				
309	151	1P13-ACV-5014	Gasket Set	RGASKETX372	1	1	2
			Note: To replace Gasket Set (RGASKETX222) already sent for both units				
310	152	1P13-ACV-5015	Gasket Set	RGASKETX372	1	1	2
			Note: To replace Gasket Set (RGASKETX222) already sent for both units				
188-190	155	1N23-ACV-5731A 1N23-ACV-5731B 1N23-ACV-5731C	Gasket	13B7288X012	2	2	4
			Note: 1 Gasket set (1 qty of 13B7288X012) already sent to both units				
14-16	8	1N23-ACV-5732A 1N23-ACV-5732B 1N23-ACV-5732C	Gasket	17B4977X062	1	1	2
			Note: 1 Gasket (17B4977X062) already sent for both units				

附件 3

RIR No	Item No	Tag No	Inspect Comment	Status
RIR-ICD-233	6	1N12-ABV-5031C	After inspection, we found the following valves input pneumatic tubing of actuator was distorted; the cause is that the tubing installed length too short. Please repair.	
		1N12-ABV-5040B		
	7	1N22-ABV-5050B	After inspection, we found the following valves output pneumatic tubing of air regular set (67CFR) was distorted; the cause is that the tubing installed length too long. Please modify.	
		1N22-ABV-5043A		
		1N23-ABV-5026C		
	9		After inspection we failed to find any electron-pneumatic transducer's stainless steel tag plates. Please provide.	
	10	1N14-ABV-5031A	After inspection, we found the drive rod for transmitting motion of valve was distorted. Please replace and adjust.	
		1N22-ABV-5037		
	11	1P62-ABV-5081A	After inspection, we found the valve No.1P62-ABV-5081A drive rod for transmitting motion of valve fell down. Please repair and adjust.	
	12	1N22-ABV-5043B	After inspection, we found some retainer rings of the control valves drive rod were too tight, which the retainer rings are located at control valve drive rod both side. Please modify and adjust.	
		1N23-ABV-5710A		
		1N23-ABV-5710B		
	13	1N23-ABV-5711A	According to the service condition of technical data sheets, the valve shall use double layer graphite packing material at vacuum condition, but we found the some received valve packing material is graphite. Please clarify.	
	14		According to the last paragraph of specification section 3.3.8.3"the supplier shall provide 3 liters coating material for touch up use in the field.", But we failed to find any paint. Please provide.	
	18	1N11-ABV-5017A	After inspection, we found the valve number 1N11-ABV-5017A bench set pressure of valve actuator is missing from nameplate. Please modify.	
	19	1N11-ABV-5017B	After inspection, we found the valve number 1N11-ABV-5017B valve body rating is missing from nameplate. Please modify.	
	20	1N12-ABV-5029A	After inspection, we found the valve number 1N12-ABV-5029A on nameplate is typo (1P12-ABV-5029A). Please modify.	
	21	1N22-ABV-5050A	After inspection, we found the following valves number imprint words of valve nameplate's are come off. Please replace.	
		1N22-ABV-5053		
		1N33-ABV-5026		
		1N33-ABV-5027A		
		1P62-ABV-5072		
	22	1P62-ABV-5070A	After inspection, we found the following valves have two solenoid valves (the model number one is HTX8327G041,and other one is EF8320G1741)which are inconsistent with Emerson's drawing No.35669.IS009C.5-14035 and technical data sheet. Please clarify.	
		1P62-ABV-5070B		
		1P62-ABV-5081A		
		1P62-ABV-5081B		
	26	All 8" EWT valves	After inspection we found the body size of received 8" EWT type control valves is 200mmX100mm, which are inconsistent with TDS 200mm. Please clarify.	
	27	All 6" EWT valves	After inspection we found the body size of received 6" EWT type control valves is 150mmX100mm, which are inconsistent with TDS 150mm. Please clarify	
	28	All 4" EWT valves	After inspection we found the body size of received 4" EWT type control valves is 100mmX50mm, which are inconsistent with TDS 100mm. Please clarify.	
	29	1N12-ABV-5050A	According to the technical data sheet the valves number 1N12-ABV-5050A~C characteristic of valve trim is Quick open, but we found the characteristic of received valve trim is EQ%. Please clarify.	
		1N12-ABV-5050B		
		1N12-ABV-5050C		
	30	The same as Item 27		
	33	1P52-ABV-5011B	After inspection, we found the valve number 1P52-ABV-5011B rated coefficient (CV) is 338 which is inconsistent with technical data sheet (539) please clarify.	
	34	All ball valves	After inspection we found all nameplates of ball control valves didn't fix on the valve. Please add and fixate it.	
	38	1N22-ABV-5052	We found the gauge dial of air set regulator of control valve 1N22-ABV-5052 was damaged. Please	
	40	1N14-ABV-5032A	After inspection, we found the parts of caps of valve's hand-wheel are short. Please provide.	
		1N14-ABV-5033A		
		1N14-ABV-5143A		
		1N21-ABV-5088C		
		1N22-ABV-5043B		
		1N23-ABV-5711B		
		1N23-ABV-5716A		
		1P24-ACV-5021B		
		1P24-ACV-5028A		
		1P62-ABV-5023A		
		1P62-ABV-5023B		
		1P62-ABV-5029		
		1P62-ABV-5067		
	42	1P22-ABV-5072B	We found the gauge of air set regulator of control valve 1P22-ABV-5072B was distroed. Please replace	
	44	All ACV	After inspection, we failed to find any enclosure identification on position switch. Please clarify.	
RIR-ICD-216	6	1P62-ABV-5017A1	We found the gages of air set regulator of control valves (Number: 1P62-ABV-5017A1/1P62-ABV-5059A) were damaged. Please replace.	
		1P62-ABV-5059A		
	8	All ACV	According to specification section 3.3.5.6, the terminal connection of position switch shall be of screw type, but we found the terminal connection of actual received in position switch is pin type. Please	
RIR-ICD-235	7	1N23-ACV-5713A	After inspection we found the body size of received valve No.1N23-ACV-5713A/B is 500x400mm,	

		1N23-ACV-5713B	which is inconsistent with technical data sheet (500mm). Please clarify.	
	8	1N23-ACV-5714A1	After inspection we found the body size of received valves No.1N23-ACV-5714A1~A3 and 1N23-ACV-5714B1~B3 is 150x100mm, which is inconsistent with technical data sheet (150mm). Please clarify.	
		1N23-ACV-5714A2		
		1N23-ACV-5714A3		
		1N23-ACV-5714B1		
		1N23-ACV-5714B2		
		1N23-ACV-5714B3		
	9	1N14-ABV-5194A	After inspection, we found the body size of received valves No.1N14-ABV-5194A/B and 1N14-ABV-5198A/B is 300x200mm, which is inconsistent with technical data sheet (300mm). Please clarify.	
		1N14-ABV-5194B		
		1N14-ABV-5198A		
		1N14-ABV-5198B		
	11	1N23-ACV-5727B	After inspection we found some volume tanks have installed pressure gauges on ACV. but, some volume tank for ABV have not installed. Please clarify.	
		1N14-ABV-5194A		
	13	The same as item 8		
RIR-ICD-234	7		This comment on Emerson's shipment number 390702/393659-1(1st batch from Sakura Manufactory) are same as above items. Please clarify or replace.	
	8	1P62-ACV-5003	We found surfaces of all remote pipe stands were corroded. Please re-coating.	
		1N33-ACV-5033		
	11	1P62-ACV-5003	After inspection, we found the parts of caps of valve's hand-wheel are short. Please provide	
		1N33-ACV-5042		
		1P62-ACV-5052A		
		1P62-ACV-5052B		
	12	The same as Item 3		
	14	1P62-ACV-5013A	After inspection we found the body size of received valve No.1P62-ACV-5013A is 100x50mm, which is inconsistent with technical data sheet (100mm). Please clarify.	
	15	1N21-ACV-5125A	According to the technical data sheet the valves number 1N21-ACV-5125A~C characteristic of valve trim is LINEAR, but we found the characteristic of received valve trim is QUICK OPEN. Please clarify	
		1N21-ACV-5125B		
		1N21-ACV-5125C		
	16	1N21-ACV-5125B	After inspection, we found the valve number 1N21-ACV-5125B on nameplate was wrongly printed (1N21-ACV-5125C). Please modify.	
	17	1P62-ACV-5003	After inspection, we found the valve number 1P62-ACV-5003 characteristic of valve trim is LINEAR, but we found the characteristic of received valve trim is EQ%. Please clarify.	
	18	1N21-ACV-5125A	After inspection, we found the valve number 1N21-ACV-5125A~C rated coefficient (CV) is 69 which is inconsistent with technical data sheet (105) please clarify.	
		1N21-ACV-5125B		
		1N21-ACV-5125C		
	19	1P62-ABV-5011	After inspection, we found the valve number 1P62-ABV-5011 rated coefficient (CV) is 124 which is inconsistent with technical data sheet (251) please clarify.	
	22	1P62-ACV-5051	After inspection, we found the valve number 1P62-ACV-5051 gap was too much, which is located between the diaphragm casings and actuator. Please re-check.	
	23	1N33-ACV-5042	After inspection, we found the valve number 1N33-ACV-5042 characteristic of valve trim is missing from nameplate. Please modify.	
	24	1P62-ACV-5003	After inspection, we found the valve number 1P62-ACV-5003 remote positioner(DVC 6005) cover can't open. Please modify.	
	25	1P62-ABV-5054B	After inspection, we found the valve number 1P62-ABV-5054B imprint words of valve nameplate's are come off. Please replace.	
	26	All 6" EWT valves	After inspection we found the body size of received 6" EWT type control valves is 150mmX100mm, which is inconsistent with TDS 150mm. Please clarify.	
	28		As referring to Emerson's drawing number 35559.IS009C.5-04621 the manufacture nameplate is located in cabinet left low side. However, after inspection we failed to find the said nameplate (Emerson). Please clarify.	
	29	1H21-PL-5204	As referring to Emerson's drawing number 35559.IS009C.5-04823, Each SPA panel grounding bar should be separated into the cabinet grounding bar and shield grounding bar. However, after inspection we failed to find the shield grounding bar in 1H21-PL-5204 and 1H21-PL-5206.please clarify and re-	
		1H21-PL-5206		
	30	1H21-PL-5202	After inspection, we found the remote transmitters, which the model number and manufacture name are SPA Hart and MOORE in 1H21-PL-5202 were fell down. Please re-fixed.	
RIR-ICD-236	6	1B21-ABV-5064A	After inspection, we found the valve No.1B21-ABV-5064A and 1B21-ABV-5094 drive rods for transmitting motion of valve were not fitted. Please repair and readjust.	TDS should be changed
		1B21-ABV-5094		TDS should be changed
	7	1N33-ACV-5002	After inspection we found the body size of received valve No.1N33-ACV-5002 is 150x100mm, which is inconsistent with technical data sheet. Please clarify.	
	8	All ACV	According to the Emerson's drawing No. 356699.IS009C.5-04605 the model number of local potentiometer for ACV is DVC 6015(ACV), However, we found the model number of received and SWAI's valve data sheet is DVC 6015HC.pleas clarify.	TDS should be changed
	9	All ACV	According to the Emerson's drawing No. 356699.IS009C.5-04605 and actual received that the model number of remote potentiometer for ACV is DVC 6005. However, we found the above said model number on SWAI's valve data sheet is DVC 6015HC. Pleas clarify which one is correct?	TDS should be changed
RIR-ICD-314	3	1N23-ACV-5731A	According to the Emerson's drawing No. 356699. IS009C.5-04634, the remote potentiometer model number on remote pipe stand and the actual received is DVC 6005. However, we found the above said model number on SWAI's valve data sheet is DVC 6025HC. Pleas clarify.	

	4	1N23-ACV-5705A	According to the Emerson's drawing No. 356699. IS009C.5-04633, the remote potentiometer model number on remote pipe stand and the actual received is DVC 6005. However, we found the above said model number on SWAI's valve data sheet is DVC 6015HC. Pleas clarify.	
	6	1N23-ACV-5728A	We found the pressure gauge of air set regulator(64R) on remote pipe stand for valve 1N23-ACV-5728A was distorted. Please replace.	
	8	1N23-ABV-5744B	We found retainer ring of the valve number 1N23-ABV-5744B drive rod was too tight, which the retainer rings is located at control valve drive rod both side. Please modify and adjust.	
RIR-ICD-315	2	All ACV	We failed to find any steel tag plates of electron-pneumatic transducers stainless. Please provide.	
	3	2P62-ACV-5051	According to the Emerson's drawing No. 356699. IS009C.5-04606, the remote potentiometer model number on remote pipe stand and the actual received is DVC 6005. However, we found the above said model number on SWAI's valve data sheet is DVC 6015HC. Pleas clarify.	
	5	2P31-ADV-5051	We found the valves number 2P31-ADV-5051 and 2P31-ADV-5074 have installed a shutoff valve between the pneumatic tubing of air regular set (67CFR) and valve actuator, which is inconsistent with	
		2P31-ADV-5074		
	6	2N12-ABV-5050A	According to the technical data sheets the valves number 2N12-ABV-5050A~C characteristic of valve trim is Quick Open. However, we found the characteristic of received valve trim is EQ%. Please clarify.	
		2N12-ABV-5050B		
		2N12-ABV-5050C		
	7	2P62-ACV-5003	According to the technical data sheets the valves number 2P62-ACV-5003 characteristic of valve trim is Linear. However, we found the characteristic of received valve trim is EQ%. Please clarify.	
	8	All ball valves from ite	We found the Cv values of all ball valves from item B01 to B13 are missing from nameplates. Please modify.	
	9	2P62-ABV-5070B	We found some stainless tag plate of position switches and solenoid valves were typo, the detailing valves number list as following.	
		2P62-ABV-5024		
		2P62-ABV-5023A		
	10	2P62-ABV-5085	We found the stainless tag plate of position switches for the valve number 2P62-ABV-5085 was wrongly printed (1P62-ZS-5085). Please modify.	
	11	2P62-ABV-5021A2	We found the stainless tag plate of the valve number for the valve number 2P62-ABV-5021A2 was wrongly printed (1N21-ACV-5012A2). Please modify.	
	12	2N21-ABV-5095C	We found the pressure gauge of air set regulator (67CFR) on the valve number 2N21-ABV-5095C was distorted. Please replace.	
	13	2P13-ACV-5002	According to valve data sheets the valve position transmitters for valve No.: 2P30-ACV-5002 and 2P11-ACV-5788 shall be mounted on the control valves. However, we found the valves and transmitters of	
		2P11-ACV-5788		
	14	2N21-ABV-5049A	We found some retainer rings of the control valves drive rod were too tight, which are located on control valve drive rod both side. Please modify and adjust.	
		2N21-ABV-5049C		
		2N21-ABV -5079B		
		2N21- ABV-5091C		
		2N21-ABV-5091D		
		2N21-ABV- 5092D		
		2N21 -ABV-5096A		
		2N21-ABV-5100B		
		2P22-ABV-5072A		
		2P62-ABV-5023B		
	15	2N21-ABV-5049A	We found some retainer rings of the control valves drive rod were frication with fixed plate of position switches, please modify and adjust.	
		2N21-ABV-5079B		
		2N21-ABV-5092D		
		2P62-ABV-5070B		
	16	2N14-ABV-5186A	We found some valve's drive rod for transmitting motion install didn't properly, which were located on stem indicator and position switch both side. Please modify and adjust.	
		2N14-ABV-5186B		
		2N14-ABV-5190A		
		2N14-ABV-5190B		
		2P62-ABV-5021A1		
		2B21- ABV-5064A		
		2B21- ABV-5064B		
		2B21- ABV-5064C		
		2B21-ABV-5094		
		2N22-ABV- 5043A		
		2N33-ABV-5040		
		2P22-ABV-5072A		
		2P22-ABV-5072B		
		2P22-ABV-5072C		
RIR-ICD-320	3	2N33- ACV -5002	According to the Emerson's drawing No. 356699. IS009C.5-04606, the remote potentiometer model number on remote pipe stands and the actual received is DVC 6005. However, we found the above said model number on SWAI's valve data sheet is DVC 6015HC. Pleas clarify	
		2P62-ACV-5035		
	4	2P62-ACV-5035	According the Emerson's drawings No.35669. IS009C.5-046621 to 04626, the SPA modules shall be assembled in common SPA HART cabinet. However, we found all the SPA modules of actual received were separately in each packages(such as item 269 2P62-ACV-5035). Please clarify.	
	5	2P52-ABV-5005	The nameplate didn't not fix on valve number 2P52-ABV-5005 body. Please re-fixed.	
	6	2P24-ACV-5028B	We found the stainless tag plate of signal transducer for the valve number 2P24-ACV-5028B was wrongly printed (1P24-IRK-5028B). Please modify.	
	7	1P62-ABV-5021A1	We found the formal pattern of valve nameplate were different from Nilai and Sakura manufactory, which is inconsistent with the last second paragraph of specification section 3.3.9 identification and marking requirements of valve's nameplate.(such as valves number 1P62-ABV-5021A1 and 2N21-	
		2N21-ABV- 5120		

	8	2P13-ACV-5016	We would like to indicate the stainless tag plates of position transmitter and signal transducer for the valve number 2P13-ACV-5016 shall be changed for each other. However, this mistake will be done by LCO for Emerson on site.	
RIR-ICD-324	2	1/2N23-ACV-5732A	According to the Emerson's drawing No. 356699. IS009C.5-04608, the remote potentiometer model number on remote pipe stands and the actual received is DVC 6005. However, we found the above said model number on SWAI's valve data sheet is DVC 6025HC. Pleas clarify.	
		1/2N23-ACV-5732B		
		1/2N23-ACV-5732C		
RIR-ICD-329	3	2N23-ACV-5713A/B	According STONE & WEBSTER TDS the EP transducer model number is DVC 6015HC. There is inconsistency between TDS and EP transducer model we received. Please clarify.	
	4	2N23-ABV-5721A	Tag No. 2N23-ABV-5721A and 2N23-ABV-5721C, the two valves are inconsistency between TDS and nameplate. According the TDS, the valve type is EZ, and the valve size is 19mm. Please clarify.	
		2N23-ABV-5721C		
	5	2P28-ACV-5026F	Tag No. 2P28-ACV-5026F, there is inconsistency between packing list and nameplate. The packing No. 03 item 235 is 2P28-ACV-5026F, but the nameplate is 2P28-ACV-5026P. Please clarify.	
	6	2N12-ABV-5049C	Tag No. 2N12-ABV-5049C, 2N14-ABV-5023B, 2N14-ABV-5031B, there is no filter on these valve tube vent. Please clarify.	
		2N14-ABV-5023B		
		2N14-ABV-5031B		
RIR-ICD-333	1	2N23-ABV-5710A	Tag No. 2N23-ABV-5710A, 2N23-ABV-5717C, 2N33-ABV-5028, there is no filter on these valve tube vent. Please clarify.	
		2N23-ABV-5717C		
		2N33-ABV-5028		
RIR-ICD-336	1	2N14-ABV-5194A	Tag No. : 2N14-ABV-5194A/B and 2N14-ABV-5198A/B After inspection, we found the model number of received globe type control valve is EHD-1, which is inconsistent with technical data sheet (EHD). Please clarify.	
		2N14-ABV-5194B		
		2N14-ABV-5198A		
		2N14-ABV-5198B		
	2	2N23-ACV-5718C	After inspection, we find the remote panel 67CFR gauge is broken. Please provide.	

（由左至右）Mr. Shoji Mashio、Mr. katsuya Masuike、職謝勝鎰、Mr. Kazunori Suzuki。

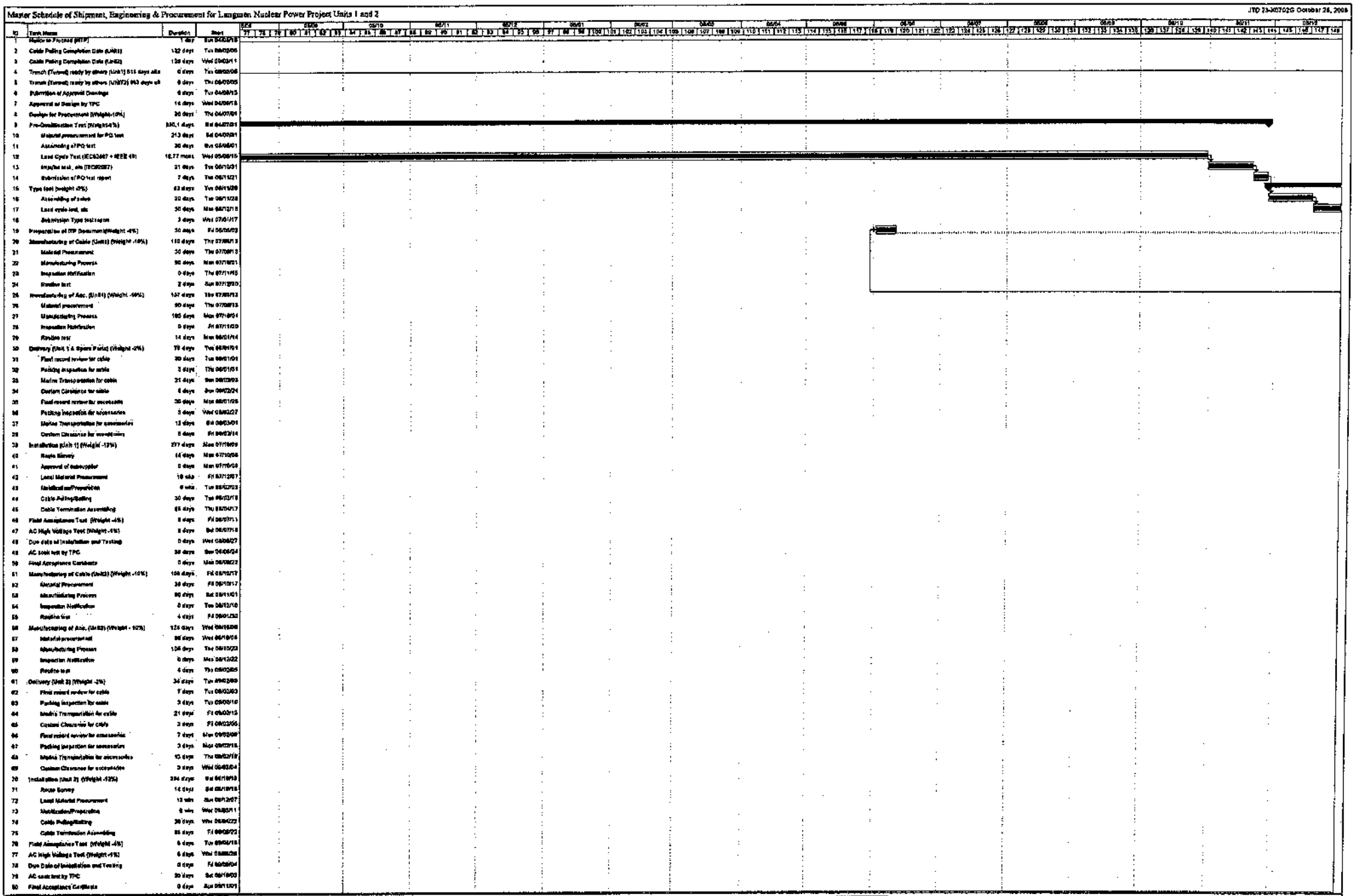
Master Schedule of Shipment, Engineering & Procurement for Lungmen Nuclear Power Project Units 1 and 2

ID	Task Name	Duration	Start	% Complete	Finish
1	Rules to Proceed (NTP)	1 day	Sat 04/05/15	100%	Sun 04/05/15
2	Cable Pulling Completion Date (Unit1)	122.4 days	Tue 09/02/06	0%	Thu 09/08/06
3	Cable Pulling Completion Date (Unit2)	138 days	Wed 09/02/11	0%	Thu 09/07/16
4	Trench (Tunnel) ready by others (Unit1) 516 days afte	0 days	Tue 09/02/05	0%	Tue 09/02/05
5	Trench (Tunnel) ready by others (UNIT2) 883 days aft	0 days	Thu 09/03/06	0%	Thu 09/03/06
6	Submition of Approval Drawings	0 days	Tue 04/06/15	100%	Tue 04/06/15
7	Approval of Design by TPC	14 days	Wed 04/06/15	100%	Tue 04/06/29
8	Design for Procurment (Weight-10%)	30 days	Thu 04/07/01	100%	Fri 04/07/30
9	Pre-Qualification Test (Weight-5%)	336.1 days	Sat 04/07/21	100%	Tue 05/11/18
10	Material procurement for PQ test	219 days	Sat 04/07/21	100%	Mon 05/02/28
11	Assembling of PQ test	30 days	Sun 05/03/01	100%	Mon 05/04/30
12	Load Cycle Test (IEC62067 ~ IEEE 48)	18.27 years	Wed 05/05/15	100%	Tue 05/10/31
13	Impulse test., etc (IEC62067)	21 days	Tue 05/11/01	100%	Tue 05/11/21
14	Extendsion of PQ test report	7 days	Tue 05/11/01	100%	Tue 05/11/08
15	Type test (weight-3%)	53 days	Tue 04/11/29	100%	Sat 07/01/20
16	Assembling of valve	20 days	Tue 04/11/29	100%	Mon 04/12/18
17	Load cycle test, etc	30 days	Mon 04/12/19	100%	Wed 07/01/17
18	Subsection Type test report	3 days	Wed 07/01/17	100%	Sat 07/01/20
19	Presentation of TP Document(Weight -0%)	30 days	Fri 06/06/02	100%	Sun 07/07/29
20	Manufacturing of Cable (Unit1) (Weight -16%)	114 days	Thu 07/03/15	100%	Mon 07/12/31
21	Material Procurement	30 days	Thu 07/03/15	100%	Fri 07/10/12
22	Manufacturing Process	80 days	Mon 07/10/01	100%	Sat 07/12/22
23	Inspection Notification	0 days	Thu 07/12/15	100%	Thu 07/12/15
24	Routine test	2 days	Sun 07/12/30	100%	Mon 07/12/31
25	Manufacturing of Acc. (Unit1) (Weight -10%)	127 days	Thu 07/04/19	100%	Sun 08/01/27
26	Material procurement	80 days	Thu 07/05/13	100%	Tue 07/12/11
27	Manufacturing Process	105 days	Mon 07/10/01	100%	Sun 08/01/13
28	Inspection Notification	0 days	Fri 07/11/09	100%	Fri 07/11/09
29	Routine test	14 days	Mon 08/01/14	100%	Sun 08/01/27
30	Delivery (Unit 1 & Spare Parts) (Weight -2%)	78 days	Tue 08/03/04	100%	Wed 08/05/19
31	Final record review for cable	30 days	Tue 08/01/01	100%	Wed 08/01/30
32	Packing inspection for cable	3 days	Thu 08/01/31	100%	Sat 08/02/02
33	Marine Transportation for cable	21 days	Sun 08/02/03	100%	Sat 08/02/23
34	Custom Clearance for cable	6 days	Sun 08/02/24	100%	Fri 08/03/29
35	Final record review for accessories	30 days	Mon 08/01/28	100%	Tue 08/02/26
36	Packing inspection for accessories	3 days	Wed 08/02/27	100%	Fri 08/03/29
37	Marine Transportation for accessories	13 days	Sat 08/03/01	100%	Thu 08/03/13
38	Custom Clearance for accessories	8 days	Fri 08/03/14	100%	Wed 08/03/19
39	Installation (Unit 1) (Weight -12%)	277 days	Mon 07/05/07	100%	Thu 08/07/10
40	Route Survey	14 days	Mon 07/10/08	100%	Sun 07/10/21
41	Approval of subsupplier	0 days	Mon 07/10/08	100%	Mon 07/10/08
42	Local Material Procurement	10 wks	Fri 07/10/12	100%	Thu 08/03/27
43	Mobilization/Preparation	5 wks	Tue 08/02/26	100%	Mon 08/03/31
44	Cable Pulling/Setting	30 days	Tue 08/02/19	100%	Wed 08/04/16
45	Cable Termination Assembling	35 days	Thu 08/04/17	100%	Thu 08/07/10
46	Field Acceptance Test (Weight -5%)	8 days	Sat 08/07/11	100%	Fri 08/07/18
47	AC High Voltage Test (Weight -1%)	6 days	Sat 08/07/19	100%	Thu 08/07/24
48	Due date of Installation and Testing	0 days	Wed 09/06/27	0%	Wed 09/06/27
49	AC cable test by TPC	30 days	Sun 09/06/04	0%	Mon 09/06/22
50	Final Acceptance Certificate	0 days	Tue 09/06/23	0%	Mon 09/06/23
51	Manufacturing of Cable (Unit2) (Weight -10%)	609 days	Fri 08/12/12	0%	Sun 09/12/02
52	Material Procurement	30 days	Fri 08/12/12	0%	Sat 09/01/10
53	Manufacturing Process	90 days	Sat 09/01/01	0%	Thu 09/01/29
54	Inspection Notification	0 days	Tue 09/12/15	0%	Tue 09/12/15
55	Routine test	4 days	Fri 09/01/30	0%	Mon 09/02/02
56	Manufacturing of Acc. (Unit2) (Weight - 10%)	124 days	Wed 09/01/28	0%	Sun 09/02/25
57	Material procurement	90 days	Wed 09/01/28	0%	Mon 09/01/28
58	Manufacturing Process	105 days	Thu 09/04/23	0%	Wed 09/07/04
59	Inspection Notification	0 days	Mon 09/12/22	0%	Mon 09/12/22
60	Routine test	4 days	Thu 09/02/26	0%	Sun 09/03/01
61	Delivery (Unit 2) (Weight -3%)	36 days	Tue 09/03/03	0%	Sun 09/04/08
62	Final record review for cable	7 days	Tue 09/02/03	0%	Mon 09/02/09
63	Packing inspection for cable	3 days	Tue 09/02/10	0%	Thu 09/02/12
64	Marine Transportation for cable	21 days	Fri 09/02/13	0%	Thu 09/03/05
65	Custom Clearance for cable	3 days	Fri 09/03/06	0%	Sun 09/03/08
66	Final record review for accessories	7 days	Mon 09/02/09	0%	Sun 09/02/15
67	Packing inspection for accessories	3 days	Mon 09/02/16	0%	Wed 09/02/18
68	Marine Transportation for accessories	13 days	Thu 09/02/19	0%	Tue 09/03/03
69	Custom Clearance for accessories	3 days	Wed 09/03/04	0%	Fri 09/03/06
70	Installation (Unit 2) (Weight -12%)	304 days	Sat 09/10/10	0%	Mon 09/08/17
71	Route Survey	14 days	Sat 09/10/10	0%	Fri 09/10/24
72	Local Material Procurement	12 wks	Sun 09/12/27	0%	Sat 09/03/28
73	Mobilization/Preparation	0 wks	Wed 09/03/11	0%	Tue 09/04/21
74	Cable Pulling/Setting	30 days	Wed 09/04/22	0%	Thu 09/04/21
75	Cable Termination Assembling	35 days	Fri 09/05/22	0%	Mon 09/07/17
76	Field Acceptance Test (Weight -5%)	8 days	Tue 09/06/16	0%	Tue 09/06/23
77	AC High Voltage Test (Weight -1%)	6 days	Wed 09/06/24	0%	Wed 09/06/02
78	Due Date of Installation and Testing	0 days	Fri 09/08/04	0%	Fri 09/08/04
79	AC cable test by TPC	30 days	Sat 09/10/03	0%	Sun 09/11/01
80	Final Acceptance Certificate	0 days	Sun 09/11/01	0%	Sun 09/11/01

Project: Schedule0809
Date: Tue 08/10/28

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

Master Schedule of Shipment, Engineering & Procurement for Lungmen Nuclear Power Project Units 1 and 2



ID	Task Name	Duration	Start
1	Notice to Proceed (NTP)	1 day	Sun 04/05/15
2	Cable Pulling Completion Date (Unit1)	132 days	Tue 09/02/06
3	Cable Pulling Completion Date (Unit2)	139 days	Wed 09/03/11
4	Trench (Tunnel) ready by others (Unit1) 515 days ahe	0 days	Tue 08/02/06
5	Trench (Tunnel) ready by others (Unit2) 563 days ah	0 days	Thu 06/07/05
6	Submition of Approval Drawings	0 days	Tue 04/08/15
7	Approval of Design by TPC	14 days	Wed 04/08/16
8	Design for Procurement (Weight=0%)	30 days	Thu 04/07/01
9	Pre-Construction Test (Weight=4%)	830.1 days	Sat 04/07/21
10	Material procurement for PQ test	210 days	Sat 04/09/21
11	Assembling of PQ test	30 days	Sun 05/04/01
12	Load Cycle Test (IEC62067 + IEEE 48)	16.77 mons	Wed 05/05/18
13	Impulse test, etc (IEC62067)	21 days	Tue 06/10/31
14	Submition of PQ test report	7 days	Tue 06/11/21
15	Type test (weight =3%)	83 days	Tue 06/11/28
16	Assembling of cable	30 days	Tue 06/11/28
17	Load cycle test, etc	30 days	Mon 06/12/18
18	Submission Type test report	3 days	Wed 07/01/17
19	Preparation of ITP Document(Weight =0%)	30 days	Fri 06/05/05
20	Manufacturing of Cable (Unit1) (Weight =19%)	110 days	Thu 07/06/21
21	Material Procurement	30 days	Thu 07/06/21
22	Manufacturing Process	80 days	Mon 07/07/02
23	Inspection Notification	0 days	Thu 07/11/15
24	Routine test	2 days	Sun 07/12/30
25	Manufacturing of Acc. (Unit1) (Weight =9%)	137 days	Thu 07/06/21
26	Material procurement	90 days	Thu 07/06/21
27	Manufacturing Process	105 days	Mon 07/10/01
28	Inspection Notification	0 days	Fri 07/11/30
29	Routine test	14 days	Mon 08/01/14
30	Delivery (Unit 1 & Spare Parts) (Weight =2%)	79 days	Tue 08/01/01
31	Final record review for cable	30 days	Tue 08/01/01
32	Packing inspection for cable	3 days	Thu 08/01/31
33	Marine Transportation for cable	21 days	Sun 08/02/03
34	Custom Clearance for cable	5 days	Sun 08/02/24
35	Final record review for accessories	30 days	Mon 08/01/28
36	Packing inspection for accessories	3 days	Wed 08/02/27
37	Marine Transportation for accessories	13 days	Sat 08/03/01
38	Custom Clearance for accessories	5 days	Fri 08/03/14
39	Installation (Unit 1) (Weight =13%)	277 days	Mon 07/10/29
40	Route Survey	14 days	Mon 07/10/29
41	Approval of Subcontractor	0 days	Mon 07/10/29
42	Local Material Procurement	10 wks	Fri 07/12/07
43	Mobilization/Preparation	0 wks	Tue 08/02/03
44	Cable Pulling/Setting	30 days	Tue 08/02/19
45	Cable Termination Assembling	65 days	Thu 08/04/17
46	Field Acceptance Test (Weight =4%)	5 days	Fri 08/07/11
47	AC High Voltage Test (Weight =1%)	5 days	Sat 08/07/19
48	Due date of Installation and Testing	0 days	Wed 08/08/27
49	AC soak test by TPC	30 days	Sun 08/08/24
50	Final Acceptance Certificate	0 days	Mon 08/09/22
51	Manufacturing of Cable (Unit2) (Weight =18%)	108 days	Fri 08/10/17
52	Material Procurement	30 days	Fri 08/10/17
53	Manufacturing Process	80 days	Sat 08/11/01
54	Inspection Notification	0 days	Tue 09/12/15
55	Routine test	4 days	Fri 09/01/30
56	Manufacturing of Acc. (Unit2) (Weight = 10%)	126 days	Wed 08/10/08
57	Material procurement	90 days	Wed 08/10/08
58	Manufacturing Process	105 days	Tue 08/10/28
59	Inspection Notification	0 days	Mon 09/12/28
60	Routine test	4 days	Thu 09/02/05
61	Delivery (Unit 2) (Weight =2%)	34 days	Tue 09/02/09
62	Final record review for cable	7 days	Tue 09/02/03
63	Packing inspection for cable	3 days	Thu 09/02/19
64	Marine Transportation for cable	21 days	Fri 09/03/13
65	Custom Clearance for cable	3 days	Fri 09/03/06
66	Final record review for accessories	7 days	Mon 09/02/09
67	Packing inspection for accessories	3 days	Mon 09/02/16
68	Marine Transportation for accessories	15 days	Thu 09/02/19
69	Custom Clearance for accessories	3 days	Wed 09/03/04
70	Installation (Unit 2) (Weight =13%)	394 days	Wed 08/10/08
71	Route Survey	14 days	Sat 08/10/18
72	Local Material Procurement	13 wks	Sun 08/12/07
73	Mobilization/Preparation	0 wks	Wed 09/03/11
74	Cable Pulling/Setting	30 days	Wed 09/04/22
75	Cable Termination Assembling	85 days	Fri 09/06/22
76	Field Acceptance Test (Weight =4%)	5 days	Tue 09/09/15
77	AC High Voltage Test (Weight =1%)	5 days	Wed 09/09/23
78	Due Date of Installation and Testing	0 days	Fri 09/09/04
79	AC soak test by TPC	30 days	Sat 09/10/03
80	Final Acceptance Certificate	0 days	Sun 09/11/01

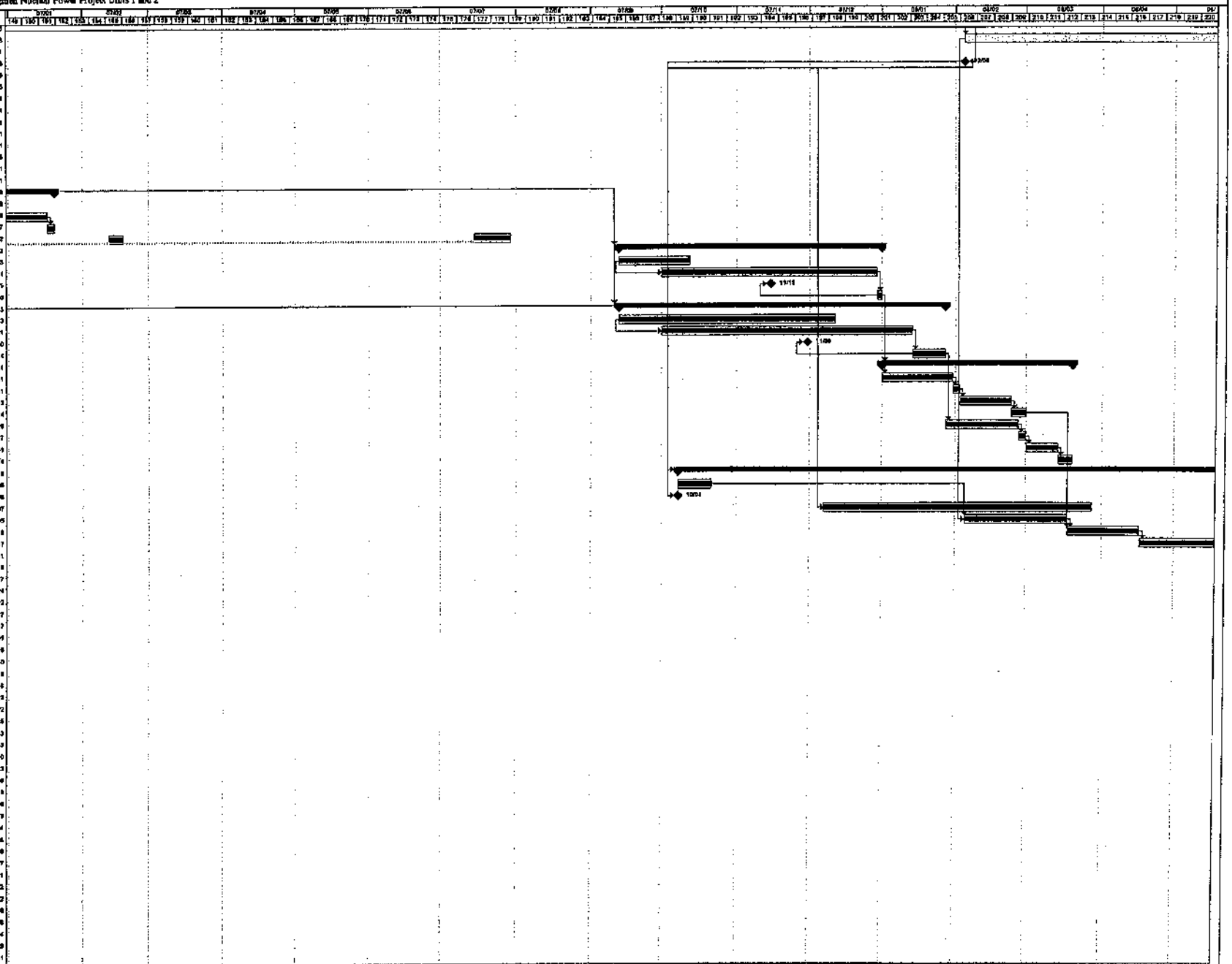
Project: Schedule0929
Date: Tue 09/10/20

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

Master Schedule of Shipment, Engineering & Procurement for Lungmen Nuclear Power Project Units 1 and 2

JFD 23-K0702G October 26, 2008

ID	Task Name	Duration	Start
1	Notice to Proceed (NTP)	1 day	Sun 04/06/15
2	Cable Pulling Completion Date (Unit1)	122 days	Tue 09/02/06
3	Cable Pulling Completion Date (Unit2)	126 days	Wed 09/03/11
4	Trench (Tunnel) ready by others (Unit1) 518 days ahe	0 days	Tue 06/06/06
5	Trench (Tunnel) ready by others (Unit2) 882 days ah	0 days	Thu 07/02/08
6	Submition of Approval Drawings	0 days	Tue 04/06/15
7	Approval of Design by TPC	14 days	Wed 04/06/16
8	Design for Procurement [Weight=10%]	30 days	Thu 04/07/01
9	Pre-Qualification Test (Weight=0%)	434.1 days	Sat 04/07/21
10	Material procurement for PQ test	213 days	Sat 04/07/21
11	Assembling of PQ test	30 days	Sun 05/05/01
12	Load Cycle Test (IEC62067 + IEEE 48)	16.73 mons	Wed 05/06/15
13	Impulse test , etc.(IEC62067)	21 days	Tue 05/10/31
14	Submition of PQ test report	7 days	Tue 05/11/21
15	Type test (weight=3%)	93 days	Tue 05/11/28
16	Assembling of set-up	30 days	Tue 05/11/28
17	Load cycle test, etc	32 days	Mon 05/12/18
18	Submission Type test report	3 days	Wed 06/01/17
19	Preparation of ITP Document(Weight =1%)	10 days	Fri 06/06/02
20	Manufacturing of Cable (Unit1) (Weight =30%)	110 days	Thu 07/02/22
21	Material Procurement	30 days	Thu 07/06/15
22	Manufacturing Process	60 days	Mon 07/10/01
23	Inspection Notification	0 days	Thu 07/11/15
24	Routine test	2 days	Sun 07/12/30
25	Manufacturing of Acc. (Unit1) (Weight =10%)	137 days	Thu 07/06/15
26	Material procurement	90 days	Thu 07/06/15
27	Manufacturing Process	135 days	Mon 07/10/01
28	Inspection Notification	0 days	Fri 08/01/30
29	Routine test	14 days	Mon 08/01/14
30	Delivery (Unit 1 & Spare Parts) [Weight =3%]	70 days	Tue 08/01/01
31	Final record review for cable	30 days	Tue 08/01/01
32	Packing Inspection for cable	3 days	Thu 08/01/31
33	Marine Transportation for cable	21 days	Sun 08/02/03
34	Custom Clearance for cable	5 days	Sun 08/02/24
35	Final record review for accessories	30 days	Mon 08/01/28
36	Packing Inspection for accessories	3 days	Wed 08/02/27
37	Marine Transportation for accessories	13 days	Sat 08/03/01
38	Custom Clearance for accessories	5 days	Fri 08/03/14
39	Installation (Unit 1) [Weight =12%]	277 days	Mon 07/10/08
40	Route Survey	14 days	Mon 07/10/08
41	Approval of subcontractor	5 days	Mon 07/10/08
42	Local Material Procurement	10 wks	Fri 07/12/07
43	Mobilization/Preparation	5 wks	Thu 08/03/06
44	Cable Pulling/Setting	56 days	Tue 08/03/18
45	Cable Termination Assembling	60 days	Thu 08/04/17
46	Field Acceptance Test (Weight =5%)	6 days	Fri 08/06/13
47	AC High Voltage Test (Weight =1%)	6 days	Sat 08/07/19
48	Due date of Installation and Testing	0 days	Wed 08/08/27
49	AC test by TPC	30 days	Sat 08/08/21
50	Final Acceptance Certificate	0 days	Mon 08/09/22
51	Manufacturing of Cable (Unit2) (Weight =19%)	139 days	Fri 08/10/17
52	Material Procurement	30 days	Fri 08/10/17
53	Manufacturing Process	80 days	Sat 08/11/01
54	Inspection Notification	0 days	Tue 09/12/15
55	Routine test	4 days	Fri 09/01/30
56	Manufacturing of Acc. (Unit2) (Weight =14%)	124 days	Wed 08/10/08
57	Material procurement	90 days	Wed 08/10/08
58	Manufacturing Process	105 days	Thu 08/10/23
59	Inspection Notification	0 days	Mon 09/12/07
60	Routine test	4 days	Thu 09/02/05
61	Delivery (Unit 2) [Weight =3%]	34 days	Tue 09/02/03
62	Final record review for cable	7 days	Tue 09/02/03
63	Packing Inspection for cable	3 days	Tue 09/02/10
64	Marine Transportation for cable	21 days	Fri 09/02/13
65	Custom Clearance for cable	3 days	Fri 09/03/06
66	Final record review for accessories	7 days	Mon 09/02/09
67	Packing Inspection for accessories	3 days	Mon 09/02/16
68	Marine Transportation for accessories	15 days	Thu 09/02/19
69	Custom Clearance for accessories	3 days	Wed 09/03/04
70	Installation (Unit 2) [Weight =12%]	384 days	Sat 09/10/24
71	Route Survey	14 days	Sat 09/10/10
72	Local Material Procurement	12 wks	Sun 09/12/27
73	Mobilization/Preparation	6 wks	Wed 09/03/11
74	Cable Pulling/Setting	30 days	Wed 09/04/22
75	Cable Termination Assembling	90 days	Fri 09/05/22
76	Field Acceptance Test [Weight =5%]	5 days	Tue 09/08/18
77	AC High Voltage Test [Weight =1%]	5 days	Wed 09/08/26
78	Due Date of Installation and Testing	0 days	Fri 09/09/04
79	AC test test by TPC	30 days	Sat 09/10/09
80	Final Acceptance Certificate	0 days	Sun 09/11/01



Project: Schedule1025
Date: Tue 08/10/28

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

Master Schedule of Shipment, Engineering & Procurement for Lungmen Nuclear Power Project Units 1 and 2

JTD 23-K07026 October 28, 2008

ID	Task Name	Duration	Start
1	Notice to Proceed (NTP)	1 day	Sun 04/06/18
2	Cable Pulling Completion Date (Unit1)	122 days	Tue 04/02/05
3	Cable Pulling Completion Date (Unit2)	129 days	Wed 04/03/31
4	Trench (Tunnel) ready by others (Unit1) 510 days a/b	0 days	Tue 04/02/05
5	Trench (Tunnel) ready by others (UNIT2) 443 days a/b	0 days	Thu 04/02/05
6	Submission of Approval Drawings	0 days	Tue 04/08/15
7	Approval of Design by TPC	14 days	Wed 04/08/16
8	Design for Procurement (Weight=5%)	30 days	Thu 04/07/01
9	Pre-Qualification Test (Weight=5%)	859.1 days	Sat 04/07/21
10	Material procurement for PQ test	219 days	Sat 04/07/21
11	Assembly of PQ test	30 days	Sun 04/08/01
12	Load Cycle Test (IEC62067 + IEEE 48)	16.77 mons	Wed 05/08/16
13	Impulse test , etc (IEC62067)	21 days	Tue 05/10/31
14	Submission of PQ test report	7 days	Tue 05/11/21
15	Type test (weight =3%)	51 days	Tue 05/11/28
16	Assembling of setup	20 days	Tue 05/11/28
17	Load cycle test, etc.	30 days	Mon 05/12/19
18	Submission Type test report	3 days	Wed 06/01/17
19	Preparation of ITP Document(Weight =1%)	23 days	Fri 06/06/02
20	Manufacturing of Cable (Unit1) (Weight =19%)	170 days	Thu 07/04/19
21	Material Procurment	30 days	Thu 07/05/10
22	Manufacturing Process	90 days	Mon 07/11/26
23	Inspection Notification	0 days	Thu 07/11/15
24	Routine test	2 days	Sun 07/12/30
25	Manufacturing of Acc. (Unit1) (Weight =19%)	197 days	Thu 07/04/19
26	Material procurment	60 days	Thu 07/05/10
27	Manufacturing Process	185 days	Mon 07/11/26
28	Inspection Notification	0 days	Fri 07/11/30
29	Routine test	10 days	Mon 08/01/14
30	Delivery (Unit 1 & Spare Parts) (Weight =2%)	78 days	Tue 08/01/01
31	Final record review for cable	30 days	Tue 08/01/01
32	Packing inspection for cable	3 days	Thu 08/01/31
33	Marine Transportation for cable	21 days	Sun 08/02/03
34	Custom Clearance for cable	9 days	Sun 08/02/24
35	Final record review for accessorie	30 days	Mon 08/01/28
36	Packing inspection for accessories	3 days	Wed 08/02/27
37	Marine Transportation for accessorie	12 days	Sat 08/03/01
38	Custom Clearance for accessories	8 days	Fri 08/03/14
39	Installation (Unit 1) (Weight =12%)	377 days	Mon 07/10/08
40	Route Survey	14 days	Mon 07/10/08
41	Approval of submergation	0 days	Mon 07/10/08
42	Local Material Procurment	15 mons	Fri 07/12/07
43	Mobilization/Preparation	6 mons	Tue 08/02/05
44	Cable Pulling/Setting	30 days	Tue 08/03/18
45	Cable Termination Assembling	45 days	Thu 08/04/17
46	Field Acceptance Test (Weight =4%)	8 days	Fri 08/07/11
47	AC High Voltage Test (Weight =1%)	8 days	Sat 08/07/19
48	Due date of installation and Testing	0 days	Wed 08/08/27
49	AC mock test by TPC	30 days	Sun 08/08/24
50	Final Acceptance Certificate	0 days	Mon 08/09/22
51	Manufacturing of Cable (Unit2) (Weight =10%)	186 days	Fri 08/09/17
52	Material Procurment	30 days	Fri 08/10/17
53	Manufacturing Process	90 days	Sat 08/11/25
54	Inspection Notification	0 days	Tue 08/12/16
55	Routine test	4 days	Fri 09/01/30
56	Manufacturing of Acc. (Unit2) (Weight = 10%)	134 days	Wed 08/10/08
57	Material procurment	60 days	Wed 08/10/08
58	Manufacturing Process	105 days	Thu 08/12/25
59	Inspection Notification	0 days	Mon 09/03/23
60	Routine test	4 days	Thu 09/03/26
61	Delivery (Unit 2) (Weight =2%)	34 days	Tue 09/03/31
62	Final record review for cable	7 days	Tue 09/03/31
63	Packing inspection for cable	3 days	Tue 09/04/14
64	Marine Transportation for cable	21 days	Fri 09/04/17
65	Custom Clearance for cable	3 days	Fri 09/05/08
66	Final record review for accessories	7 days	Mon 09/04/20
67	Packing inspection for accessories	3 days	Mon 09/05/18
68	Marine Transportation for accessories	13 days	Thu 09/05/21
69	Custom Clearance for accessories	3 days	Wed 09/06/03
70	Installation (Unit 2) (Weight =13%)	364 days	Sat 08/10/18
71	Route Survey	14 days	Sat 08/10/18
72	Local Material Procurment	12 mons	Sun 08/12/07
73	Mobilization/Preparation	6 mons	Wed 09/03/11
74	Cable Pulling/Setting	30 days	Wed 09/04/22
75	Cable Termination Assembling	60 days	Fri 09/06/12
76	Field Acceptance Test (Weight =4%)	8 days	Tue 09/09/15
77	AC High Voltage Test (Weight =1%)	8 days	Wed 09/09/23
78	Due Date of Installation and Testing	0 days	Fri 09/09/04
79	AC mock test by TPC	30 days	Sat 09/10/03
80	Final Acceptance Certificate	0 days	Sun 09/11/01

08/27

09/22

10/15

10/22

09/04

Project: Schedule0903
Date: Tue 08/10/28

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

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