

行政院及所屬各機關出國報告  
(出國類別：其他)

## 龍門計劃國外製造機械、儀電設備製程中品質查驗

服務機關：台灣電力公司核能安全處  
出國人職稱：核能工程監  
姓名：羅士貴  
出國地區：德國、英國  
出國期間：95年7月18日~95年7月29日  
報告日期：95年8月29日

## 出國報告審核表

出國報告名稱：龍門計劃國外製造機械、儀電設備製程中品質查驗		
出國人姓名(2人以上，以1人爲代表)	職稱	服務單位
羅士貴	核能工程監	核能安全處
出國期間：95年7月18日至95年7月29日		報告繳交日期：95年8月29日
出國計畫主辦機關審核意見	<input checked="" type="checkbox"/> 1.依限繳交出國報告 <input checked="" type="checkbox"/> 2.格式完整(本文必須具備「目地」、「過程」、「心得」、「建議事項」) <input checked="" type="checkbox"/> 3.內容充實完備。 <input checked="" type="checkbox"/> 4.建議具參考價值 <input type="checkbox"/> 5.送本機關參考或研辦 <input type="checkbox"/> 6.送上級機關參考 <input type="checkbox"/> 7.退回補正，原因： <input type="checkbox"/> (1) 不符原核定出國計畫 <input type="checkbox"/> (2) 以外文撰寫或僅以所蒐集外文資料爲內容以 <input type="checkbox"/> (3) 內容空洞簡略 <input type="checkbox"/> (4) 電子檔案未依格式辦理 <input type="checkbox"/> (5) 未於資訊網登錄提要資料及傳送出國報告電子檔 <input type="checkbox"/> 8.本報告除上傳至出國報告資訊網外，將採行之公開發表： <input type="checkbox"/> 辦理本機關出國報告座談會(說明會)，與同人進行知識分享。 <input type="checkbox"/> 於本機關業務會報提出報告 <input type="checkbox"/> 9.其他處理意見及方式：	
層轉機關審核意見	<input type="checkbox"/> 1.同意主辦機關審核意見 <input type="checkbox"/> 全部 <input type="checkbox"/> 部分_____ (填寫審核意見編號) <input type="checkbox"/> 2.退回補正，原因：_____ <input type="checkbox"/> 3.其他處理意見：	

說明：

- 一、出國計畫主辦機關即層轉機關時，不需填寫「層轉機關審核意見」。
- 二、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。
- 三、審核作業應於報告提出後二個月內完成。

報告人  95.8.29 羅士貴

單位  
主管：

 95.8.29

 95.8.29 吳永富

主管處  
主管

 95.8.29 蔡茂輝

總經理  
副總經理：

 95.8.30 鄭安弘

## 行政院及所屬各機關出國報告提要

出國報告名稱：龍門計劃國外製造機械、儀電設備製程中品質查驗

頁數 55 含附件：是 否

出國計畫主辦機關/聯絡人/電話：台灣電力公司/陳德隆(人事處)/02-23667685

出國人員姓名/服務機關/單位/職稱/電話：羅士貴/台灣電力公司/核能安全處/  
核能工程監/02-23667199

出國類別：1 考察 2 進修 3 研究 4 實習 5 其他

出國期間：95/7/18~95/7/29

出國地區：德國、英國

報告日期：95/8/29

分類號/目

關鍵詞：龍門計畫、品質查驗

內容摘要：依據龍門計畫採購合約規定，派員赴 BOP 附屬機械設備製造廠家執行製程中品質查驗，本次任務為分別赴（一）MS040「Reactor Building Cranes and Auxiliary Fuel Building Crane」採購案之廠家 NKM Noell GmbH，執行設備倉儲廠家後交運時 Shipping Release 之品質查驗，包括 Final / Packing Inspection、文件審查及簽署 PQC(Product Quality Certificate)；（二）MS041A「Emergency Diesel Generator」採購案 Motor Driven 之 Keep Warm Lube Oil Pump 及 Cooling Water Keep Warm Pump 製造廠家 Weir Pumps Ltd.，執行製程中品質查驗，包括停留檢驗點及查證檢驗點之執行、製造程序之查證、持續性品質文件及紀錄之審查、品質偏差（不符合報告）處理之審查、材料之收料檢驗、標示之審查查證及廠家品質查驗時程通知之申請與安排等作業。

本文電子檔已傳至出國報告資訊網 (<http://report.gsn.gov.tw>)

行政院及所屬各機關出國報告  
(出國類別：其他)

## 龍門計劃國外製造機械、儀電設備製程中品質查驗

服務機關：台灣電力公司核能安全處  
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# 龍門計劃國外製造機械、儀電設備製程中品質查驗

## 摘 要

依據龍門計畫採購合約規定，派員赴 BOP 附屬機械設備製造廠家執行製程中品質查驗，本次任務為分別赴（一）MS040「Reactor Building Cranes and Auxiliary Fuel Building Crane」採購案之廠家 NKM Noell GmbH.，執行設備倉儲廠家後交運時 Shipping Release 之品質查驗，包括 Final / Packing Inspection、文件審查及簽署 PQC(Product Quality Certificate);(二) MS041A「Emergency Diesel Generator」採購案 Motor Driven 之 Keep Warm Lube Oil Pump 及 Cooling Water Keep Warm Pump 製造廠家 Weir Pumps Ltd.，執行製程中品質查驗，包括停留檢驗點及查證檢驗點之執行、製造程序之查證、持續性品質文件及紀錄之審查、品質偏差（不符合報告）處理之審查、材料之收料檢驗、標示之審查查證及廠家品質查驗時程通知之申請與安排等作業。

# 龍門計劃國外製造機械、儀電設備製程中品質查驗

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## 壹、出國任務說明

本項出國計畫為依據龍門計畫採購合約規定，派員赴 BOP 附屬機械設備製造廠家執行製程中品質查驗，本次任務為分別赴(一) MS040「Reactor Building Cranes and Auxiliary Fuel Building Crane」採購案之廠家 NKM Noell GmbH，執行設備倉儲廠家後交運時 Shipping Release 之品質查驗，包括 Final / Packing Inspection、文件審查及簽署 PQC(Product Quality Certificate)；(二) MS041A「Emergency Diesel Generator」採購案 Motor Driven 之 Keep Warm Lube Oil Pump 及 Cooling Water Keep Warm Pump 製造廠家 Weir Pumps Ltd.，執行製程中品質查驗，包括停留檢驗點及查證檢驗點之執行、製造程序之查證、持續性品質文件及紀錄之審查、品質偏差（不符合報告）處理之審查、材料之收料檢驗、標示之審查查證及廠家品質查驗時程通知之申請與安排等作業。

## 貳、出國行程

95.7.18~95.7.19	台北-阿姆斯特丹-Wuerzburg	往 程
95.7.20~95.7.22	德國 NKM Noell GmbH 公司	執行品質查驗
95.7.23~95.7.23	Wuerzburg—Glasgow	路 程
95.7.24~95.7.26	英國 Weir Pump 公司	執行品質查驗
95.7.27~95.7.29	Glasgow-London-台北	返 程

## 參、品質查驗工作報告

### 一、MS040「Reactor Building Cranes and Auxiliary Fuel Building Crane」採購案

#### 1. 查驗方式

- 龍門計畫 MS040「Reactor Building Cranes and Auxiliary Fuel Building Crane」採購案，採購合約為 8749011M04000，採購

規範為 Spec. No. 31113.61.1210 Rev.4 Amendment 2, Quality

Class 為 R-1。本採購案之設備為：

- ◆ 2 sets of Reactor Building Crane-150 tons (Tag No. 1/2F31-CRN-0001)
- ◆ 1 set of Auxiliary Fuel Building Crane-150 tons (Tag No. 0F31-CRN-0001)
- ◆ 2 sets of Hatch Hoist in Room 420-8 tons (Tag No. 1/2F31-HOI-0020)
- ◆ 2 sets of Hatch Hoist in Room 430-8tons (Tag No. 1/2F31-HOI-0021)

得標廠家為德國 NKM Noell Special Cranes GmbH, 本採購案主要之設備 Trolley of RBC(Reactor Building Crane)、Trolley of AFBC(Auxiliary Fuel Building Crane) 及 Trolley of Reactor Building Hatch Hoist, 由其 Sub-supplier 捷克之 KPS 公司製造及組裝 (屬外購外製), 以 DDP(Delivered Duty Paid)交運。Trolley 之製造及組裝範圍包括: Fabrication of trolley frames, rope drum, bottom blocks, shaft, axles and miscellaneous machinery equipment, assembly of trolley and cabling on trolley workshop test 等作業; 而本採購案 Crane 及 Hatch Hoist 之 Main Girders (如: Steel bridge、Crane Rails)及 Electrical Wiring, 以及工地安裝作業等, 則由台灣中船公司承製 (屬外購內製)。

- 本採購案由於龍門施工處 Reactor Building and Auxiliary Fuel Building 之廠房施工進度嚴重落後, 無法如期提供廠商安裝吊車, 因此經本公司與廠家 NKM 溝通討論後, NKM 建議外製部份之設備於製造完成後, 將設備儲存於德國以減低長期儲存於工地之空間及風險, 並於設備完成各項品質查驗後, 支付廠家 80%設備款以利其資金周轉之要求; 經龍門施工處



與核火工處研討及評估後同意廠家之提議，並執行合約之修訂展延安裝日期、增列設備倉儲前 PQC 簽署規定、儲存期間廠家對設備之檢查及維護規定、修訂付款條件，以及交運前相關檢驗、PQC 簽署、品質文件紀錄提送及付款條件之規定等協商（詳附件一）。

- ▶ 有關設備倉儲期之維護檢查及設備交運之文件提送規定，經本公司與 NKM 協議後決議為：在倉儲期廠家必須負責定期檢查，執行必要之維護及其他保護儲存設備之措施，以防設備受損；故廠家應提出 Special Storage Requirement 送 TPC/S&W 審查同意後，確時依規定執行維護檢查，必要時 TPC/S&W 得派員前往檢查。倉儲後設備交運時，廠家須提送之文件為：Packing List、倉儲前之全部品質文件、Bill of Lading(B/L) or Airway Bill、儲存前所核發之 PQC、交貨前所核發之 PQC (Release for Shipment)、儲存期間之維護檢查紀錄並附照片。
  
- ▶ 依據核火工處於 2006 年 4 月 28 日給廠家 NKM Noell 之函（N4F-0604-0861-PELE），原預定 2007 年 8 月 16 日安裝之一號機 RBC(Reactor Building Crane)，因 RPV 內部組件安裝擬提前於 2006 年 12 月 31 日完成（詳附件二），經廠家赴龍門施工處實際參觀工地現況及規劃安裝吊車組立之大型吊具，以及與其 Sub\_supplier（中船公司）商討安裝吊車及相關 Main Girders 製造等事宜後；廠家規劃 2006 年 8 月份交運一、二號機 RB Hatch Hoists 之 Trolley 及 RBC/AFBC Trolley 之附件，2006 年 9 月份交運一號機 RBC 及 AFBC 之 Trolley，二號機 AFBC 之 Trolley 則計劃於明年中交運。

➤ 故本次赴廠家執行設備品質查驗包括：執行前述設備儲存期交運前之 Final Inspection、Package Inspection 及簽 PQC(Product Quality Certificate)，主要作業為查驗製造廠家在設備儲存期間，是否確時依據 Special Storage Requirement 之規定，執行定期維護檢查並留存維護檢查紀錄，及目視檢查設備外觀表面是否受損發生銹蝕，以及設備之包裝是否符合要求。

➤ 依據文件

1. Specification No. 31113.61.1210 Rev.4, Amendment 1 Rev.3
2. Special Storage requirement (No.27015.MS040.06-020007 Rev.0)
3. Quality Plan-Europe fabrication (No.27015.MS040.04-020006 Rev.1)
4. Quality Record List EU-RBC (No.27015.MS040.04-021503 Rev.1)
5. Quality Record List EU-AFBC (No.27015.MS040.04-021602 Rev.0)
6. Quality Record List EU-Hatch Hoist (No.27015.MS040.04-021701 Rev.0)
7. N4F-04078009-PELP dated July 7, 2004

➤ NKM Noell 公司查驗接洽人員：

Mr. Karl Manger (Project Manager)

Mr. Peter Wolf (Quality Control Manager)

Mr. Melurat Oehel (Quality Control Engineer)

LOXXESS WareCare GmbH 倉儲管理員

## 2. 查驗結果

➤ 本採購案之外製設備已於 2004 年 12 月 4 日，在其 Sub-supplier

捷克之 KPS 公司製造完成，並簽妥倉儲前之 PQC (Product Quality Certificate)；製造完成之設備其中 Reactor Building Crane 及 Auxiliary Fuel Building Crane 等 3 台之 Trolley，因設備較大以特製木板架載運，其他較小之組件如：RBC 及 AFBC Trolley 之 Attachment 及 Bottom Blocks，以及 Hatch Hoist 等設備，則以厚鋁皮包覆並予以真空密封包裝後，底部用實木製成之支撐座固定後，分別放入 9 個 20 呎之貨櫃 (Container) 固定，之後全部設備均運往廠家 NKM 總公司 (位於德國 Wuerzburg) 以西約 20 公里之 LOXXESS WareCare GmbH 專業倉儲公司之倉庫儲存，廠家並應按 Special Storage Requirement 之規定，執行每 3 個月及 6 個月之倉儲檢查，並記載留存相關檢查紀錄。

- ▶ 經由 NKM 公司之 Mr. Karl Manger、Mr. Peter Wolf、Mr. Melurat Oehel 及 LOXXESS 值班人員陪同赴倉庫，共同執行 Final Inspection、Package Inspection 儲存之設備；本採購案之 3 台 Trolley 及 9 個貨櫃存放於倉庫一隅。經檢視 Reactor Building Crane 及 Auxiliary Fuel Building Crane 之 3 台 Trolley，以塑膠厚帆布覆蓋存放以防銹蝕及防灰塵，9 個 20 呎貨櫃則兩個貨櫃互疊擺放於 3 台 Trolley 旁存放。
  
- ▶ 經掀開覆蓋在一、二號機 Reactor Building Crane 之 Trolley 及 Auxiliary Fuel Building Crane 之 Trolley 的塑膠厚帆布後，檢查發現一號機 RBC Trolley 之捲揚鼓表面，有一處直徑約 2 公分面積之輕微銹蝕痕跡，經廠家除銹處理後已解決；另 AFB Crane Trolley 之 Gearbox 其 Cap cover 之 2 個 1/2”螺絲頭之油漆損壞脫落，經查原因為執行 Trolley Gearbox 定期倉儲保

養，移除螺絲螺旋掀起 Gearbox 時造成，廠家承諾交運時於更換 Gearbox 新油後再補漆，除發現此二處較明顯之缺失外，其餘未發現有損傷之情況，設備表面亦很乾淨整潔，組件表面黃色之噴漆看起來亦還頗鮮艷，另 Gearbox 部份亦無漏油現象，整體來說儲存之 Trolley 狀況尚稱良好，Trolley 雖僅以塑膠厚帆布覆蓋儲存，但儲存至今已近二十多個月經檢視設備之表面，感覺色澤還很鮮艷，經查倉儲公司空調設施及儲存地點之環境頗佳。

➤ 檢視 9 個貨櫃儲存之設備，經分別開啓 9 個貨櫃；9 個貨櫃內存放之設備分別如下：

1. RBC Unit 1-Trolley Attachments ( Equipment ID/1F31-CRN-0001 , Container ID/286770-2 )
2. RBC Unit 1-Bottom Blocks ( Equipment ID/1F31-CRN-0001 , Container ID/385386-1 )
3. RBC Unit 2-Trolley Attachments ( Equipment ID/2F31-CRN-0001 , Container ID/211516-2 )
4. RBC Unit 2- Bottom Blocks ( Equipment ID/2F31-CRN-0001 , Container ID/434413-3 )
5. AFC- Bottom Blocks ( Equipment ID/0F31-CRN-0001 , Container ID /217875-3 )
6. RB Unit 1-Hatch Hoist Room 420 ( Equipment ID/1F31-HOI-0020 , Container ID/852506-3 )
7. RB Unit 1-Hatch Hoist Room 430 ( Equipment ID/1F31-HOI-0021 , Container ID/217069-1 )
8. RB Unit 2-Hatch Hoist Room 420 ( Equipment ID/2F31-HOI-0020 , Container ID/245068-7 )
9. RB Unit 2-Hatch Hoist Room 430 ( Equipment ID/2F31-HOI-0021 , Container ID/212493-1 )

➤ 經開啓貨櫃編號 245068-7，其內儲存之設備為編號 2F31-HOI-0020 之 Unit 2 Hatch Hoist for Room 420，經檢查發現 Hatch Hoist 無損傷之情況，設備表面亦很乾淨整潔，設備

上放置多個大袋型之乾燥劑；再開啓貨櫃編號 211516-2 設備編號為 2F31-CRN-0001 Unit 2 Reactor Building Crane 之 Trolley Attachments，經檢查設備亦無損傷銹蝕之情況。

前述兩個貨櫃開啓後內部存放之設備，其包封之鋁皮已撕開露出設備，此為廠家執行定期檢查設備時撕開之故。

經再開啓編號 286770-2、385386-1、434413-3、217875-3、852506-3、217069-1 及 212493-1 等七個貨櫃，檢查貨櫃內設備仍以鋁皮包封則未撕開檢查，廠家說明因撕開兩個貨櫃內設備之鋁皮包封檢查，未發現設備有損傷銹蝕之情況，因設備是以厚鋁皮包封並密封以抽真空方式包裝，但若設備包裝鋁皮撕開後必須在工廠才能施做鋁皮包封作業，故廠家評估認為不破壞鋁皮之包裝，對設備儲存防氧化效果較佳，經討論後同意廠家之說明；經逐一開取各個貨櫃檢查設備之外包鋁皮未發現有損壞之現象，設備鋁皮包紮完整且很結實的固定在貨櫃底座，設備鋁皮外並附有 Packing List；經核對各貨櫃 PQC 之設備名稱/編號、Packing List 及其存放之貨櫃編號無誤。

- 檢查完 LOXXESS 倉儲公司儲存之三台大型之 RBC、AFBC Trolley 及 9 個貨櫃存放包裝三台大型 Trolley 之 Attachment 及 Bottom Blocks，以及 Hatch Hoist 之 Trolley 等設備後，赴位於 Wuerzburg 之 NKM Noell 總部辦公室，查核相關 QRP 及儲存期之維護保養紀錄。

經查 QRP 之內容，廠家均按 QRL 之規定製成品質成套文件，石威公司 Inspector 執行 Final QA Record Review 時，並在 Record 每頁 Stamped 審查紀錄，廠家 QRP 檔案之維護管理亦做得頗完整。

審查設備儲存期之維護檢查紀錄，廠家均能按 Special Storage

Requirement 之規定，執行每 3 月及 6 月之維護檢查，並留存維護紀錄（詳附件三）及維護保養紀錄完整。

經檢查 9 個貨櫃存放設備之 Final / Package Inspection 合格及相關 QRP 及儲存期之維護保養紀錄審查符合後，簽署 9 個貨櫃存放可交運設備之 PQC（詳附件四）。

- MS040 採購案之三台大型之 RBC Trolley 及 AFBC Trolley，因其體積龐大（RBC Trolley 尺寸為 L9133xW5800xH2430mm、AFBC Trolley 尺寸為 L5300xW4865xH2820mm）無法以貨櫃裝運，而且因設備太寬太高無法以陸路運到海港裝船交運，故三台大型之 RBC Trolley 及 AFBC Trolley，其中一號機 RBC Trolley 及 AFBC Trolley，將經水路由目前儲存之 LOXXESS 倉儲公司附近之美茵河（Main River）上船，再經萊茵河（Rhine River），運到北海之漢堡港（Hamburg）後進行包裝（Package）上船交運。

本次赴廠檢驗時已執行該三台大型之 RBC Trolley 及 AFBC Trolley 之 Final Inspection 結果合格，廠家計劃設備運抵漢堡港時再進行包裝作業，有關三台大型 Trolley 執行 Package Inspection 及簽 PQC 之作業方式，經與廠家 Mr. Karl Manger (Project Manager) 研商後達成協議，預計下個月交運之一號機 RBC Trolley 及 AFBC Trolley，廠家應將 Trolley 運抵漢堡港進行包裝完成檢驗合格之過程拍照存證，並將相關照片及 PQC 寄送本處審查，經本處審查無誤簽妥 PQC 後回覆廠家；二號機 RBC Trolley 則繼續儲存於 LOXXESS 倉儲公司，待明年中再交運。

- 有關 MS040 “Reactor Building Cranes and Auxiliary Fuel

Building Crane”採購案之倉儲期交運前執行 Final / Package Inspection 作業情況之照片如附件五。

## 二、MS041A 「Emergency Diesel Generator」採購案

### 1. 查驗方式

- 龍門計畫 MS041A 「Emergency Diesel Generator」採購案之 ASME Section III Pumps，包括下列 Pump：
  - a. AC Motor Driven Keep Warm Lube Oil Pump (6 台，設備 ID: 1/2R21-P-0006A/B/C，Motor Class Non-1E)
  - b. DC Motor Driven Keep Warm Lube Oil Pump (6 台，設備 ID: 1/2R21-P-0013A/B/C，Motor Class Non-1E)
  - c. CW Keep Warm Pump (6 台，設備 ID: 1/2R21-P-0010A/B/C，Motor Class Non-1E)
  - d. DC Motor Driven Fuel Oil Booster Pump (6 台，設備 ID: 1/2R21-P-0003A/B/C，Motor Class 1E)
  - e. Vertical Fuel Oil Transfer Pump (12 台，設備 ID: 1/2R21-P-0001A1/A2/B1/B2/C1/C2，Motor Class 1E)
  - f. Motor Driven Lube Oil Back up Pump (6 台，設備 ID: 1/2R21-P-0012A/B/C，Motor Class 1E)
  - g. Fuel oil Return Pump (屬 Commercial Grade，6 台，設備 ID: 1/2R21-P-0004A/B/C，Motor Class Non-1E)

ASME Section III Pumps 之採購規範為“Material and Process Requirements for ASME Section III Pumps Standard Equipment Requirements” (Specification No. 31113-OA24-1221 Rev. 2)。

- MS041A 「EDG」採購案由 S.E.M.T. Pielstick/ALSTOM 公司共同承攬，S.E.M.T. Pielstick 負責提供柴油引擎部份，

ALSTOM 則負責採購規劃及與 TPC/S&W 之聯繫並提供發電機部份，以及其他主要附屬設備之採購。

MS041A 「EDG」採購案之 ASME Section III Pumps 由 Weir Pump Ltd.公司承製，位於英國蘇格蘭 Glasgow；Weir Pump Ltd.公司是一家世界著名之專業 Pump 製造廠家，能生產各式大小 Pump，且係 ASME 驗證合格之“N Stamp” Pump 製造廠家；本公司龍門計畫 NI 部份 GE 採購案號“62.1241-RCIC Drain Tank & Pump”、“62.2623-Pump / turbine”、“62.2629.1-ASME Centrifugal Pumps”及“62.2635-Vertical ASME Pumps (RHR/HPCF)”等之 Pump，均由 Weir Pump Ltd.公司承製。

- 有關 EDG 採購案 Weir Pump Ltd.承攬部份之 Pump，廠家依據核能廠 EDG 業界及採購合約，將 EDG Keep Warm 用之 Lube Oil 及 Cooling Water Pump 之 Motor 設計為 Non-Class 1E（因 Pump 屬於 Safety Related Pressure Boundary 之 Component，Motor 則無相關規定要求必須 Class 1E），而其他 Fuel Oil Booster Pump、Fuel Oil Transfer Pump 及 Lube Oil Back up Pump 等 Pump 之 Motor 則設計為 Class 1E；但 GE 設計 EDG 之 Power Supply 為 Class 1E，此結果不符 PSAR 規定 Power Supply 之 Class 1E 與 Non-Class 1E 必須 Separation 之承諾，以致發生 GE 設計 Motor 之 Power Supply 與廠家提供 Motor 要求不符 PSAR 之情況；經核技處與廠家及 GE 研商後，廠家在 Class 1E Power Supply 進入 EDG 控制盤面後，由廠家增設 Non-Class 1E 之 Relay 解決，惟此替代方案需呈報原能會核准，廠家 ALSTOM 則要求需待設計修改完成及原能會正式核准後，才願意向 Weir Pump 公司下訂單，並承諾可在下訂單後 11 個月交貨，但因為設計修改審核及向原能會呈報獲核准需花一段



時間，故 Weir Pump 承攬部份之 ASME Sec. III Pumps，係 MS041A EDG 採購案之設備迄今尚未完成交貨之特殊情況。

➤ MS041A「EDG」之 Weir Pump 採購案之品質查驗方式，除對製程中台電/石威選定的停留檢驗點及見證檢驗點執行檢驗，以及石威公司執行檢驗情況予以查驗外；並查驗製造廠家對其製程過程作業之品質檢驗是否落實；另查驗製造程序、作業程序書、規範、圖面、施工方法及品質偏差處理審查等品質文件之正確性與適當性，並審查製程所產生之品質紀錄。

➤ 依據文件

1. Specification No. 31113-OA24-1221 Rev. 2
2. Inspection & Test Plan (Quality Plan)
  - a. AC Motor Driven Keep Warm Lube Oil Pump (Document No. 12801.MS041.4-08035 Rev.2)
  - b. DC Motor Driven Keep Warm Lube Oil Pump (Document No. 12801.MS041.4-08038 Rev.2)
  - c. CW Keep Warm Pump (Document No. 12801.MS041.4-08036 Rev.2)
  - d. DC Motor Driven Fuel Oil Booster Pump (Document No. 12801.MS041.4-08034 Rev.2)
  - e. Vertical Fuel Oil Transfer Pump (Document No. 12801.MS041.4-08003 Rev.2)
  - f. Motor Driven Lube Oil Back up Pump (Document No. 12801.MS041.4-08037 Rev.2)
3. Quality Records List (QRL)
  - a. AC Motor Driven Keep Warm Lube Oil Pump (Document No. 12801.MS041.6-02299 Rev.1)
  - b. DC Motor Driven Keep Warm Lube Oil Pump (Document No. 12801.MS041.6-02302 Rev.1)
  - c. CW Keep Warm Pump (Document No. 12801.MS041.6-02300 Rev.1)

- d. DC Motor Driven Fuel Oil Booster Pump (Document No. 12801.MS041.6-02298 Rev.1)
- e. Vertical Fuel Oil Transfer Pump (Document No. 12801.MS041.6-02297 Rev.1)
- f. Motor Driven Lube Oil Back up Pump (Document No. 12801.MS041.6-02301 Rev.1)
4. Pressure Testing of AC Motor Driven Keep Warm Lube Oil Pump (Document No. 12801.MS041.6-02261 Rev.1)
5. Pressure Testing of Components (Document No. 12801.MS041.6-02323 Rev.0)
6. Hydraulic Performance Test Procedure for AC Motor Driven Keep Warm Lube Oil Pump (Document No. 12801.MS041.6-02064 Rev.2)
7. Functional Test Procedure for CW Motor Driven Keep Warm Pump (Document No. 12801.MS041.6-02062 Rev.2)
8. General Arrangement-AC Motor Driven Keep Warm Lube Oil Pump (Document No. 12801.MS041.5-02053 Rev.3)
9. General Arrangement-CW Motor Driven Keep Warm Pump (Document No. 12801.MS041.5-02055 Rev.3)

➤ Weir Pump 公司查驗接洽人員：

Mr. Stewart Reid (Project Manager)

Mr. George Bradely (Project Engineer)

Mr. Dale Allan (Lead Engineer)

Mr. Sam Ling (Application Engineer))

2. 查驗結果

- 經查驗 MS041A 「EDG」 Weir Pump 部份採購案之文件送審及 NCR、NUC 之狀況，設計文件及品質文件審查結果大部份已達 Review Status “1”，只餘少數 Motor Test Report 及 Fuel Oil Transfer Pump Design Report-Seismic & Operability Justification 之文件為 Review Status “2”（詳附件六）。

NUC Weir Pump 部份迄今有一件 NUC No. 10706，為於 2006 年 4 月 26 日石威檢驗員執行 AC Motor Driven Keep Warm Lube

Oil Pump 之 Performance Test 時，發現實際使用之 Test Oil 及 Flow Meter 的 Type，與 Hydraulic Performance Test Procedure 規定之要求不符，本 NUC 廠家尚未提出改正行動，經討論廠家擬修訂 Hydraulic Performance Test Procedure。

NCR Weir Pump 部份至目前有二件，為 DC Motor Driven Keep Warm Lube Oil Pump P0013 及 DC Motor Driven Fuel Oil Booster Pump P0003 之 Pump Data Sheet，廠家測試時之 Flow Rated value，與規定要求不符稍大，廠家開出 NCR 經評估擬“Use as is”，廠家按合約函知本公司同意，經核技處審查後核准。

- 赴 Weir Pump 工廠查驗 MS041A「EDG」ASME Sec. III Pump 生產作業，經查 6 台 AC Motor Driven Keep Warm Lube Oil Pump 及 6 台 CW Keep Warm Pump 已執行完 Hydrostatic Test、Performance Test 及 Pump dismantled Inspection，查驗時已組裝妥並與 Non-Class 1E 之 Motor 連接固定在機座，該等設備亦已 Cleaning 及 Coating 完成，待執行 Final / Packing Inspection。另 DC Motor Driven Keep Warm Lube Oil Pump 製造中，尚未執行 Hydrostatic / Performance Test。

至於屬 Class 1E Motor 之 6 台 DC Motor Driven Fuel Oil Booster Pump、12 台 Vertical Fuel Oil Transfer Pump 及 6 台 Motor Driven Lube Oil Back up Pump，則需待採購自美國 TECO Westinghouse Motor Company 之 Motor，檢驗合格後運到 Weir Pump 工廠與 Pump 組裝後測試。

- 審查 MS041A「EDG」ASME Sec. III Pump 之 QRP，經查 Package 之品質紀錄，發現有關 CMTR、WPS、PQR、NDE、Inspection and Test Record、SIR、NCR 及 Drawings 等紀錄，廠家均按龍

門計畫 NI 部份 GE 採購案之 QRL (詳附件七) 作 Index 蒐集文件紀錄，經告知本案 ASME Sec. III Pump 屬 BOP 採購由石威公司負責，MS041A「EDG」廠家 Alstom 提出審核之 QRL (詳附件八) 與 GE 採購案不同，廠家 Project Engineer 稱他不知有此不同之 QRL，同意重新按 ASME Sec. III Pump 之 QRL 作 Index 蒐集建檔；本缺失經查其原因為 Project Manager 未將 ASME Sec. III Pump 之 QRL 傳達給工作人員，同時石威檢驗人於前次執行 Hydrostatic Test 審查 QRP 時，未落實及時告知廠家，幸好此項發現尚在製程中，非於最終檢驗審查 QRP 時，廠家還有充足的時間修正。

- 查驗石威公司執行本公司選定檢驗點之會同檢驗作業，經查 AC Motor Driven Keep Warm Lube Oil Pump 及 CW Keep Warm Pump 執行 Hydrostatic / Performance Test 時，石威公司檢驗員執行會同檢驗時，均能在相關 Test Report 會簽。
- 本次廠家查驗審查 QRP 時，亦發現廠家提出並經石威及本公司已審查核准之 QRL，經研討後認為需增列“As-built Outline & Assembly Drawing”較妥，以利檢測審查作業之需及 QRP 品質紀錄之完整性，廠家亦頗表認同；故擬與石威討論後請石威公司去函廠家要求 QRL 增列“As-built Outline & Assembly Drawing”。
- 有關審查 MS041A「EDG」之 ASME Sec. III Pump 採購案，Weir Pump 公司工廠現場作業情況之照片詳附件九。

#### 肆、出國期間所遭遇之困難與特殊事項

無。

## 伍、心得與建議

綜合本次廠家製程中品質查驗之經驗，心得如下：

1. MS040 「Reactor Building Cranes and Auxiliary Fuel Building Crane」採購案，廠家德國 NKM Noell Special Cranes GmbH 為一非常專業之 Crane 製造廠家，其工作人員對 Crane 相關作業參與頗深並表現高度熱誠，對本公司採購設備及本公司赴廠檢驗均甚表重視與親切；有關本採購之設備，廠家提議同意儲存於德國以減低長期儲存於工地之風險，對本公司減輕倉儲空間壓力及預防設備損傷銹蝕有很大之幫助；
2. MS041A 「Emergency Diesel Generator」之 ASME Section III Pumps 採購案，廠家英國 Weir Pumps Ltd.公司在 Pump 專業製造上，無論在設計及研發方面都有非常先進之技術，其廠房面積甚廣，廠房個別製程之作業區劃分標示的非常清楚，並且實施人車分流之路徑，非常重視工安，廠房並常維持整潔，很值得我們學習。
3. 整體而言本公司委託石威公司執行 Surveillance 之檢驗，依其作業留在品質紀錄之 Stamped 顯示，大致均能完成本公司之要求；惟石威公司派遣之 Inspector 在執行 Inspection / Test 時，應利用空餘時間預先審查廠家準備之 QRP(Quality Record Package)，若發現有缺失或錯誤時應及時通知廠家修正作業，以節省後續最終審查 QRP 之時程，避免耽誤設備交運。

## 陸、附件

## 台灣電力公司

## 核能火力發電工程處

## DEPARTMENT OF NUCLEAR AND FOSSIL POWER PROJECTS

TAIWAN POWER COMPANY

P. O. BOX NO.13-202

TAIPEI, TAIWAN, REPUBLIC OF CHINA

TEL : 21502 TAINUFOS

FAX : (02)2391-0281

02)2391-0218

TEL : (02)2391-0241

Fax to: NKM Noell Special Cranes GmbH &amp; Co KG

Fax No: 002 49 931 903 1080

Attention: Mr. Karl Manger, Project Manager

Subject: Taiwan Power Company

Lungmen Project, Fourth Nuclear Power Plant Units 1&amp;2

Contract No. 8749011M04000 Reactor Building Cranes and Auxiliary Fuel Building Crane

Contract Amendment (Extension of Installation/Erection Completion Date and Related Terms and Conditions)

N4F-04078009- PELP

July 7, 2004

**Code: Important & Urgent!**

Gentlemen,

Please be advised that the revised Installation/Erection Completion Dates for the subject Contract has been approved by TPC's top management. TPC hereby agrees to extend the Installation/Erection Completion Dates without change to the Contract Price as follows:

Equipment Description	Forecast Installation Start Date (Reference Only)	Installation/Erection Completion Date
Unit 1 Reactor Building Crane	3/31/2006	8/31/2006
Unit 2 Reactor Building Crane	3/31/2007	8/31/2007
Auxiliary Fuel Building Crane	9/30/2005	2/28/2006
Unit 1 Maintenance Hoists	3/31/2006	8/31/2006
Unit 2 Maintenance Hoists	3/31/2007	8/31/2007

In addition, the related terms and conditions shall be changed and enforced as follows:

1. **add additional requirements for "After NKM Noell's completion of manufacturing work" as follows:**

NKM Noell shall notify TPC/S&W to make necessary inspections at its plant site and issue related quality control documents and S&W shall perform necessary inspections and signing of PQC with the confirmation of no pending item for record before putting the equipment into storage.

## DEPARTMENT OF NUCLEAR AND FOSSIL POWER PROJECTS

## TAIWAN POWER COMPANY

**2. add additional requirements for "Inspection during storage period" as follows:**

During the storage period, Noell is responsible for the routine/periodical monitoring, necessary maintenance and other activities as required for protecting the equipment from any loss or damage. Noell shall prepare and submit "Special Storage Requirements" to TPC/S&W for review and approval in advance and shall strictly follow the requirements as set forth in the "Special Storage Requirements" to store the Equipment in the facility properly. When necessary, TPC will dispatch its representative to the facility to execute/perform monitoring and/or inspection.

**3. modify Para. 2.2.2.1.1.B for Equipment payment and required payment documents as follows:**

For eighty percent (80%) of the Price for foreign equipment:

The payment of eighty percent (80%) shall be made when the Foreign Portion have been passed the inspection and have been properly stored at NKM Noell's (Noell) facility (including its foreign Subsupplier's facility). The documents as required for payment request shall include the following:

- 1) The Supplier's signed commercial invoice;
- 2) Material list for the Equipment to be temporarily stored in Noell's facility (including its foreign Subsupplier's facility);
- 3) Certificate of completion of manufacturing after inspection (signed PQC) and certificate of completion of Equipment storage after placing into storage; accompanied with pertinent photos as evidence;
- 4) Supplier's firm statement stating the following:
  - a) The Supplier has completed the manufacturing of the equipment;
  - b) The equipment has been inspected by TPC/S&W and is acceptable;
  - c) The equipment has been properly stored in the storage area in accordance with the "Special Storage Requirements".

For five percent (5%) of the Price for foreign equipment:

The payment of five percent (5%) shall be made after the delivery of the Foreign Portion to TPC's Job Site. The documents as required for payment request shall include the following:

- 1) The Supplier's signed commercial invoice;
- 2) Packing list;
- 3) All QA documents before storage;
- 4) Maintenance Record during storage period with Photos;
- 5) Signed PQC before storage;
- 6) Signed PQC before delivery (Release for Shipment);
- 7) Temporary receiving certificate issued and signed by TPC's Job Site.

DEPARTMENT OF NUCLEAR AND FOSSIL POWER PROJECTS

## TAIWAN POWER COMPANY

4. **modify Para. 2.6.1 under the Para. 2.6 " TITLE AND RISK OF LOSS OR DAMAGE " as follows:**

Upon making payment for eighty percent (80%) of the price for Foreign Portion, the title of the Material/Equipment shall be transferred to TPC immediately. However, Para. 2.6.2 and 2.6.3 remains unchanged.

5. **Before delivery:**

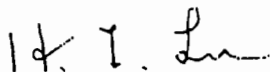
Before Noell initiates the shipping, Noell should send an advance notice to TPC in a timely, then TPC will dispatch its representatives to Noell to make necessary inspections and sign a new PQC and maintenance record during storage period with photos as evidence.

Except those changes stated above, the remaining terms and conditions, including Contract Price under the subject Contract shall remain unchanged.

Meanwhile, please be advised that for the implementation of the subject Contract, this letter for subject change shall become a part of Contract Documents. Therefore, TPC hereby requests NKM Noell to provide your confirmation with agreement to the above change and this letter shall be treated as part of the Contract Documents. Please return your confirmation with agreement by fax on/before July 16, 2004 and sent the original of your confirmation letter to us for record.

Your attention and prompt response to the above will be highly appreciated.

Sincerely yours



H. I. Lu

Director, DNFPP

cc: Mr. S.H. Liao, TPC-DNE Project Manager (02-2367-1675)

Mr. Sheldon Chow, S&W Taipei (02-2696-3357)

Mr. C. H. Liu, TPC-Site Manager (02-2490-2402)



台灣電力公司  
核能火力發電工程處

DEPARTMENT OF NUCLEAR AND FOSSIL POWER PROJECTS

FAX: (02)2391-0281  
(02)2391-0216  
TEL: (02)2391-0241

TAIWAN POWER COMPANY  
P.O.BOX NO. 13-202  
TAIPEI, TAIWAN, REPUBLIC OF CHINA

N4F-0604-8061-PELE

April 28, 2006

Fax to: NKM NOELL Special Cranes GmbH & Co KG

Wuerzburg, German

Fax No.: 002-49-931-903-1080

Attention: Mr. Karl Manger, Project Manager

Subject: Taiwan Power Company

Lungmen Project, Fourth Nuclear Power Plant Units 1&2

Contract No.8749011M04000, Reactor Building Cranes and Auxiliary Fuel  
Building Crane

Installation/Erection Completion Date for Unit 1 RBC

Reference: N4F-0505-8039-PELE, dated 5/20/2005

**Code: Important!!**

Dear Mr. Manger,

The previously informed forecast installation start date for Unit 1 RBC was August 16, 2007 by reference letter. However, to support the RPV internal installation, the subject crane installation of Unit 1 RB Crane should be completed with an earlier date which is December 31, 2006. Noell is therefore requested to complete the required fabrication, inspection, assembly and test activities/work for both Foreign Portion and Local Portion and deliver the said Unit 1 Equipment to the Site and then start the required preparation and subsequent activities for the installation work and the all required permits and certification in accordance with the applicable ROC government codes and regulations is to be obtained before December 31, 2006 for the subject crane usage.

TPC will expedite the relative civil construction to support your crane installation; the forecast completion date of crane rail girder of Reactor Building will be on or before November 15, 2006.

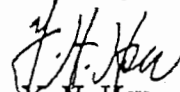
DEPARTMENT OF NUCLEAR AND FOSSIL POWER PROJECTS

**TAIWAN POWER COMPANY**

Your assistance and cooperation to install/finish the Unit 1 RBC and all related activities on/before the above mentioned date will be highly appreciated. Please acknowledge your receipt of this notification and provide your compliance with the above mentioned required completion date for Unit 1 RBC to TPC by return fax on/before May 5, 2006.

If you have any question regarding this matter, please do not hesitate to contact TPC and S&W.

Sincerely yours



Y. H. Hsu

Project Manager, DNFP

cc: Dr. Sheldon Chow, S&W Taipei Operations Manager (02-26963357)

Mr. S.H. Liao, TPC-DNE (02-2367-1675)

Mr. J.Y. Hsu, Site Director (02-2490-2402)

<b>NKM NOELL</b> NKM Noell Special Cranes GmbH & Co KG	<h1>Inspection Report</h1>	No.: 06-020007-0
		Page 1 of 1

## Storage Inspection

according to Special Storage Requirements,  
Document No. 27015.MS040.06-020007

**Additional check of indicator and corrosion protection inside main hoist gear boxes every 6 month:**      Yes       No

Component :	Inspection result
Trolley of RBC Unit 1	without objection
Trolley of RBC Unit 2	without objection
Trolley of AFBC	without objection
Container No. 1 RBC Unit 1 – Trolley attachments	without objection
Container No. 2: RBC Unit 1 – Bottom Blocks	without objection
Container No. 3: RBC Unit 2 – Trolley attachments	without objection
Container No. 4: RBC Unit 2 – Bottom Blocks	without objection
Container No. 5: AFBC – Bottom Blocks	without objection
Container No. 6: RB Unit 1 Hatch Hoist Room 420	without objection
Container No. 7: RB Unit 1 Hatch Hoist Room 430	without objection
Container No. 8: RB Unit 2 Hatch Hoist Room 420	without objection
Container No. 9: RB Unit 2 Hatch Hoist Room 430	without objection


**Inspection remarks:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Maintenance activities required:**      No       Yes

**Attachments:**      -----

Inspector   30.03.2005, Wolf Peter Date, Signature	Client resp. Third Party Inspector    Date, Signature
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<b>NKM NOELL</b> NKM Noell Special Cranes GmbH & Co KG	<b>Inspection Report</b>	No.: 06-020007-1
		Page 1 of 2

### Storage Inspection

according to Special Storage Requirements,  
Document No. 27015.MS040.06-020007

**Additional check of indicator and corrosion protection inside main hoist gear boxes every 6 month:**      Yes       No

Component :	Inspection result
Trolley of RBC Unit 1	without objection
Trolley of RBC Unit 2	without objection
Trolley of AFBC	without objection
Container No. 1 RBC Unit 1 – Trolley attachments	without objection
Container No. 2: RBC Unit 1 – Bottom Blocks	without objection
Container No. 3: RBC Unit 2 – Trolley attachments	without objection
Container No. 4: RBC Unit 2 – Bottom Blocks	without objection
Container No. 5: AFBC – Bottom Blocks	without objection
Container No. 6: RB Unit 1 Hatch Hoist Room 420	without objection
Container No. 7: RB Unit 1 Hatch Hoist Room 430	without objection
Container No. 8: RB Unit 2 Hatch Hoist Room 420	without objection
Container No. 9: RB Unit 2 Hatch Hoist Room 430	without objection


**Inspection remarks:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Maintenance activities required:**      No       Yes

**Attachments: Corrosion protection report inside main gear boxes**

Inspector  09.06.2005, Wolf Peter Date, Signature	Client resp. Third Party Inspector   Date, Signature
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# BERICHT

Art der Arbeitsmaschine:	Kran-Anlage (Trolley Kran)		
Anlaß des Montageeinsatzes:	Konservierung der Getr. (Corrosion protection of gearbox)		
Schadensfall? Wenn ja, Folgen...	/.		
Laufstunden bzw. Laufzeit	Std/Tag,	/.	
1 2 3 Schichten			
Naßbetrieb:	0		
Stoßlastbetrieb:	0		
häufiges Anfahren:	0 Anlage I (RBC 1 Trolley)		
Motordaten:			
Drehstrom:	0	Getr. PLE 56 - RM - V12 - 1058 Nr. 680986	
Gleichstrom:	0	-11- Nr. 680987	
Verbrennungsmotor:	0	Konserviert	
Gasturbine:	0	Getr. PE 28 - RM - V13 - 160 Nr. 680998	
Leistung:	kW	ist mit Öl gefüllt / voll	
Spannung:	V		
Frequenzrichterbetrieb:	0	Anlage II (RBC 2 Trolley)	
Getriebetemperatur:			
Raumtemperatur:	min.	max.	
Temperatur:	min.	max.	Getr. PE 56 - RM - V22 - 560 Nr. 680977 PE 56 - RM - V21 - 560 Nr. 680974
Kühlung:	Lüfter:	0 Konserviert	
Öl - Luft - Kühler:	0	Getr. NE - RM - V13 - 180 Nr. 680985	
Öl - Wasser - Kühler:	0	PE 25 - T61 - VM - 180 Nr. 680987	
Zentrale Kühlanlage:	0	sind mit Öl gefüllt / voll	
Ölsorte:			
Ölzustand:	Anlage III (Auxiliary Trolley)		
Schwebstoffe:			
sonstiges:			
Überwachung der Schmierstoffversorgung:			
Durchflußwächter:	0	Getr. PE 56 - RM - V22 - 560 Nr. 680976	
Niveauschalter:	0	Getr. PE 56 - RM - V21 - 560 Nr. 680975	
Temperaturmessung:	0	Konserviert	
Beschränkungen für Montage: Einbau:	0	Getr. NE 25 - RM - V13 - 180 Nr. 680984	
Raum:	0	sind mit Öl gefüllt / voll	
Gewicht:	0		
Transport:	0	* Corrosion protection expired after 18 Months	
Schmutz:	0	Staub:	0
Fremdkörper:	0		
Spritzwasser:	0	Wasserdampf:	0
Getriebeunterbau:	Einbau des Getriebes in der Anlage bitte skizzieren!		
Stahlgerüst:	0	Beton:	0
starr:	0	getrennt (gemeinsam mit An - od. Abtrieb):	0
Hinweise auf Bedarf an neuen Getrieben			
Hinweise für die Qualitätssicherung:	0	Vorschlag:	

09/06/05 [Signature]

<b>NKM NOELL</b> NKM Noell Special Cranes GmbH & Co KG	<h1>Inspection Report</h1>	No.: 06-020007-2
		Page 1 of 1

## Storage Inspection

according to Special Storage Requirements,  
 Document No. 27015.MS040.06-020007

**Additional check of indicator and corrosion protection inside main hoist gear boxes every 6 month:**      Yes       No

Component :	Inspection result
Trolley of RBC Unit 1	without objection
Trolley of RBC Unit 2	without objection
Trolley of AFBC	without objection
Container No. 1 RBC Unit 1 – Trolley attachments	without objection
Container No. 2: RBC Unit 1 – Bottom Blocks	without objection
Container No. 3: RBC Unit 2 – Trolley attachments	without objection
Container No. 4: RBC Unit 2 – Bottom Blocks	without objection
Container No. 5: AFBC – Bottom Blocks	without objection
Container No. 6: RB Unit 1 Hatch Hoist Room 420	without objection
Container No. 7: RB Unit 1 Hatch Hoist Room 430	without objection
Container No. 8: RB Unit 2 Hatch Hoist Room 420	without objection
Container No. 9: RB Unit 2 Hatch Hoist Room 430	without objection


**Inspection remarks:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Maintenance activities required:**      No       Yes

**Attachements:**      -

Inspector  10.10.2005, Wolf Peter Date, Signature	Client resp. Third Party Inspector   Date, Signature
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<b>NKM NOELL</b> NKM Noell Special Cranes GmbH & Co KG	<h1>Inspection Report</h1>	No.: 06-020007-3 Page 1 of 1
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## Storage Inspection

according to Special Storage Requirements,  
 Document No. 27015.MS040.06-020007

**Additional check of indicator and corrosion protection inside main hoist gear boxes every 6 month:**      Yes       No

Component :	Inspection result
Trolley of RBC Unit 1	without objection
Trolley of RBC Unit 2	without objection
Trolley of AFBC	without objection
Container No. 1 RBC Unit 1 – Trolley attachments	without objection
Container No. 2: RBC Unit 1 – Bottom Blocks	without objection
Container No. 3: RBC Unit 2 – Trolley attachments	without objection
Container No. 4: RBC Unit 2 – Bottom Blocks	without objection
Container No. 5: AFBC – Bottom Blocks	without objection
Container No. 6: RB Unit 1 Hatch Hoist Room 420	without objection
Container No. 7: RB Unit 1 Hatch Hoist Room 430	without objection
Container No. 8: RB Unit 2 Hatch Hoist Room 420	without objection
Container No. 9: RB Unit 2 Hatch Hoist Room 430	without objection

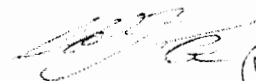
**Inspection remarks:** \_\_\_\_\_

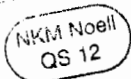
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**Maintenance activities required:**      No       Yes

**Attachments: Corrosion protection report inside main gear boxes**

Inspector  11.01.2006, Wolf Peter Date, Signature	Client resp. Third Party Inspector   Date, Signature
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<b>NKM NOELL</b> NKM Noell Special Cranes GmbH & Co KG	<b>Inspection Report</b>	No.: 06-020007-4
		Page 1 of 1

### Storage Inspection

according to Special Storage Requirements,  
Document No. 27015.MS040.06-020007

**Additional check of indicator and corrosion protection inside main hoist gear boxes every 6 month:**      Yes       No

Component :	Inspection result
Trolley of RBC Unit 1	without objection
Trolley of RBC Unit 2	without objection
Trolley of AFBC	without objection
Container No. 1 RBC Unit 1 – Trolley attachments	without objection
Container No. 2: RBC Unit 1 – Bottom Blocks	without objection
Container No. 3: RBC Unit 2 – Trolley attachments	without objection
Container No. 4: RBC Unit 2 – Bottom Blocks	without objection
Container No. 5: AFBC – Bottom Blocks	without objection
Container No. 6: RB Unit 1 Hatch Hoist Room 420	without objection
Container No. 7: RB Unit 1 Hatch Hoist Room 430	without objection
Container No. 8: RB Unit 2 Hatch Hoist Room 420	without objection
Container No. 9: RB Unit 2 Hatch Hoist Room 430	without objection

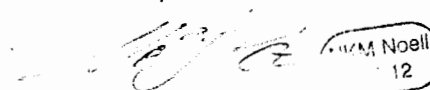
**Inspection remarks:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Maintenance activities required:**      No       Yes

**Attachments: Corrosion protection report inside main gear boxes**

Inspector  12.04.2006, Wolf Peter Date, Signature	Client resp. Third Party Inspector   Date, Signature
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<b>NKM NOELL</b> NKM Noell Special Cranes GmbH & Co KG	<h1>Inspection Report</h1>	No.: 06-020007-5
		Page 1 of 1

## Storage Inspection

according to Special Storage Requirements,  
Document No. 27015.MS040.06-020007

**Additional check of indicator and corrosion protection inside main hoist gear boxes every 6 month:**      Yes       No

Component :	Inspection result
Trolley of RBC Unit 1	without objection
Trolley of RBC Unit 2	without objection
Trolley of AFBC	without objection
Container No. 1 RBC Unit 1 – Trolley attachments	without objection
Container No. 2: RBC Unit 1 – Bottom Blocks	without objection
Container No. 3: RBC Unit 2 – Trolley attachments	without objection
Container No. 4: RBC Unit 2 – Bottom Blocks	without objection
Container No. 5: AFBC – Bottom Blocks	without objection
Container No. 6: RB Unit 1 Hatch Hoist Room 420	without objection
Container No. 7: RB Unit 1 Hatch Hoist Room 430	without objection
Container No. 8: RB Unit 2 Hatch Hoist Room 420	without objection
Container No. 9: RB Unit 2 Hatch Hoist Room 430	without objection


**Inspection remarks:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Maintenance activities required:**      No       Yes

**Attachments: Corrosion protection report inside main gear boxes**

Inspector  18.07.2006, Wolf Peter Date, Signature	Client resp. Third Party Inspector   Date, Signature
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**LUNG MEN PROJECT**  
**RELEASE FOR SHIPMENT**  
**Product Quality Certificate**

CLIENT :Taiwan Power Company	TPC CONTRACT. NO. 87490011 M04000 AMENDMENT 1 & 2	SHIPMENT.NO. MS 040-0001
TPC SPECIFICATION NO. 31113.61.1210	REV. 4	ADDENDA N.A.
PRODUCT DESCRIPTION Reactor Building Trolley, Unit 1, 1F31-CRN-0001		
<b>SUPPLIER'S CERTIFICATION</b>		
I HEREBY CERTIFY THAT THE PRODUCT(S) IDENTIFIED HEREIN HAVE BEEN MANUFACTURED UNDER A CONTROLLED PROGRAM AND ARE IN COMPLIANCE WITH THE APPLICABLE CODES, STANDARDS AND SPECIFICATIONS LISTED IN TPC PURCHASE SPECIFICATION REQUIREMENT.		
<u>ITEM NO.</u>	<u>QUANTITY</u>	
1F31-CRN-0001	Fabrication of trolley frames, rope drums, bottom blocks, shafts, axles and miscellaneous machinery equipment, assembly of trolley and cabling on trolley including workshop test.	
	Details are listed on attached packing lists for Container No. 286770-2 and 385386-1.	
	(This PQC is shipping release before delivery)	
ALL SUPPORTING DOCUMENTATION REQUIRED BY THE ABOVE REFERENCED DOCUMENTS HAVE BEEN ISSUED TO TPC		
<b>AUTHORIZED REPRESENTATIVE.</b>		
SIGNED <i>[Signature]</i>	(NKM Noell) QS 12	DATE 20.07.2006
TITLE QA/QC Manager		SUPPLIER NKM Noell
<b>TPC REPRESENTATIVE CERTIFICATION<sup>1</sup></b>		
THIS IS TO CERTIFY THAT EVIDENCE SUPPORTING THE ABOVE SUPPLIERS' CERTIFICATION STATEMENT HAS BEEN REVIEWED AND THAT NO DEVIATIONS FROM QUALITY ASSURANCE REQUIREMENTS HAVE BEEN FOUND UNLESS NOTED BELOW."		
AUTHORIZED DEVIATIONS AND NONCONFORMANCES HAVE BEEN NOTED BELOW.		
SIGNED <i>[Signature]</i>		DATE July 20, 2006
TITLE TPC/DNS QA Engineer		RFA NO. -
DEVIATIONS/NONCONFORMANCES FROM PURCHASE ORDER REQUIREMENTS		

1 - The performance of inspections by S&W/TPC shall in no way impair TPC's right to reject nonconforming work or release or discharge the Supplier from any of its obligations under the contract.



**KRÁLOVOPOLSKÁ, a.s.**  
Křížkova 68a, 660 90 Brno, CZECH REPUBLIC

### PACKING SHEET

Contract No.:27015			No:			
Signo LUNG MEN Projekt			DATE: 27.1.2005			
Supplier:  KRÁLOVOPOLSKÁ, a.s. Křížkova 68, 690 00 Brno Czech republic			Customer: NKM NOELL GmbH Alfred Nobel Strasse 20 970 80 Würzburg Bundesrepublik Deutschland			
Type of transp Logistic kontakt No.1 Container 286770-2 1F31-CRN-0001						
PC	Dr Nr	POS.	TITLE	Dimension mm	weight kg	Colli
1			<b>Paletta</b>	<b>5520x2250x2000</b>	<b>880</b>	<b>1</b>
2	163553		Trolley Wheel Girder	650x850x5780	10200	
1	164073	91-101	Trolley Acces Platform	850x850x1660	100	
1	164073	85-90	Ladder	520x2778	50	
1	162606	237-244	Protection	60-600x2200	100	1
2	163553	17,24	Console	70-400x282-1070	300	
1			<b>Little Box</b>	<b>750x400x400</b>	<b>20</b>	<b>1</b>
2	164173		Brake Lining - set		20	
1	164256		Brake Lining - set		10	
4	162706,1627		Brake Lining - set		10	
1			<b>BOX</b>	<b>1000x700x700</b>	<b>40</b>	<b>1</b>
1	162598		Weight		20	
1	164110		Weight		20	
1	162586		Weight		10	
1	164116	7	Limit Switch	31-TO-S1,2 W7352	1	
1			Gear oil	CLP 220 20L	20	
1			Hydraulic pump (hand)+Hose		10	
1			Hosepipe for Pumpe			
13			Pipe union			
2	162596	12	wire	2-700	0,04	
25	163553	37	Nut	M16	0,25	
25	163553	38	Bolt	M16x90	2,5	
25	163553	39	Washer	16	0,25	
12	164073	102	Bolt	M12x40	0,7	
12	164073	103	Washer	13	0,08	
12	164073	104	Nut	M12	0,14	
1	164171	4,20-24	Platte+Limit Switch	50-50x120+31-TO-821	3	
1	164171	5-9	Console	6-215x327x78	2	
2	164171	18,8,9,13	L-square+Limit Switch 31-TO-SO	100x100x8-30	2	
4	164174	1-15	Lubrication Line		7	
2	164063	83	Buffer RUBBER	80	1	
1	162606	245,246	Console	U160-280	7,2	
12	162606	252	Bolt	M12x35 ISO 4017	0,5	
4	162606	253	Bolt	M12x40 ISO 4017	0,1	
16	162606	254	Washer	12	0,15	
16	162606	255	Nut	M12	0,15	
55	162606	256	Bolt	M24x80	27,5	
165	162606	257	Washer	25	1,65	
55	162606	258	Nut	M24	1,1	
8	162583	18	Wire	2-700	0,16	
			TARA		1050	
			NETTO		10818,47	
			BRUTTO		11868,47	



**KRÁLOVOPOLSKÁ, a.s.**  
Křížíkova 68a, 660 90 Brno, CZECH REPUBLIC

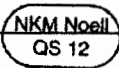
**PACKING SHEET**

Contract No.:Z7015		No:				
Signo LUNG MEN Projekt		DATE: 21.1.2005				
Supplier:		Customer:				
KRÁLOVOPOLSKÁ, a.s.		NKM NOELL GmbH				
Křížíkova 68, 690 00 Brno		Alfred Nobel Strasse 20				
Czech republic		970 80 Würzburg				
		Bundesrepublik Deutschland				
Type of transport						
No.2 Container 385386-1						
1F31-CRN-0001						
PC	Dr Nr	POS.	TITLE	Dimension mm	weight kg	Colli
1			<b>Palette</b>	<b>3140x1600x1900</b>	<b>350</b>	<b>1</b>
1	162577		Bottom Block Main Hoist	1470x1380x2800	9500	
2			Auxiliary Hoist Wire Rope	17-69000	200	
1	164256		Auxiliary Hoist Wire Rope	17-69000	200	
1			<b>Palette</b>	<b>110x1100x1250</b>	<b>50</b>	<b>1</b>
1			Main Hoist Wire Rope	33-286000	1600	
1			<b>Palette</b>	<b>110x1100x1250</b>	<b>50</b>	<b>1</b>
1	162640		Main Hoist Wire Rope	33-286000	1600	
1			<b>Palette</b>	<b>2060x1300x950</b>	<b>120</b>	<b>1</b>
2	162590		Bottom Block Auxiliary Hoist	1900x500x550	950	
		TARA		570		
		NETTO		14050		
		BRUTTO		14620		





**LUNG MEN PROJECT  
RELEASE FOR SHIPMENT  
Product Quality Certificate**

CLIENT :Taiwan Power Company	TPC CONTRACT NO. 87490011 M04000 AMENDMENT 1&2	SHIPMENT NO. MS 040-000
TPC SPECIFICATION NO. 31113.61.1210	REV. 4	ADDENDA N.A.
PRODUCT DESCRIPTION Reactor Building Trolley, Unit 2, 2F31-CRN-0001		
<b><u>SUPPLIER'S CERTIFICATION</u></b>		
I HEREBY CERTIFY THAT THE PRODUCT(S) IDENTIFIED HEREIN HAVE BEEN MANUFACTURED UNDER A CONTROLLED PROGRAM AND ARE IN COMPLIANCE WITH THE APPLICABLE CODES, STANDARDS AND SPECIFICATIONS LISTED IN TPC PURCHASE SPECIFICATION REQUIREMENT.		
<u>ITEM NO.</u>	<u>QUANTITY</u>	
2F31-CRN-0001	Fabrication of trolley frames, rope drums, bottom blocks, shafts, axles and miscellaneous machinery equipment, assembly of trolley and cabling on trolley including workshop test.	
	Details are listed on attached packing lists for Container No. 211516-2 and 434413-3	
	(This PQC is shipping release before delivery)	
ALL SUPPORTING DOCUMENTATION REQUIRED BY THE ABOVE REFERENCED DOCUMENTS HAVE BEEN ISSUED TO TPC AUTHORIZED REPRESENTATIVE.		
SIGNED <i>[Signature]</i>		DATE <i>20.07.2006</i>
TITLE <i>QA/QC Manager</i>		SUPPLIER <i>NKM Noell</i>
<b><u>TPC REPRESENTATIVE CERTIFICATION<sup>1</sup></u></b>		
THIS IS TO CERTIFY THAT EVIDENCE SUPPORTING THE ABOVE SUPPLIERS' CERTIFICATION STATEMENT HAS BEEN REVIEWED AND THAT NO DEVIATIONS FROM QUALITY ASSURANCE REQUIREMENTS HAVE BEEN FOUND UNLESS NOTED BELOW:		
AUTHORIZED DEVIATIONS AND NONCONFORMANCES HAVE BEEN NOTED BELOW.		
SIGNED <i>Shyh-Tswei Lo</i>		DATE <i>July 20, 2006</i>
TITLE <i>TPC/DNS QA Engineer</i>		RFA NO. <i>-</i>
DEVIATIONS/NONCONFORMANCES FROM PURCHASE ORDER REQUIREMENTS		

1 - The performance of inspections by S&W/TPC shall in no way impair TPC's right to reject nonconforming work or release or discharge the Supplier from any of its obligations under the contract.



**KRÁLOVOPOLSKÁ, a.s.**  
Křížkova 68a, 660 90 Brno, CZECH REPUBLIC

### PACKING SHEET

Contract No.:27015			No:			
Signo LUNG MEN Projekt			DATE: 21.1.2005			
Supplier: KRÁLOVOPOLSKÁ, a.s. Křížkova 68, 690 00 Brno Czech republic			Customer: NKM NOELL GmbH Alfred Nobel Strasse 20 970 80 Würzburg Bundesrepublik Deutschland			
Type of transport No.3 Container 211516-2 2F31-CRN-0001						
PC	Dr Nr	POS.	TITLE	Dimension mm	weight kg	Colli
1			<b>Palette</b>	<b>5520x2250x2000</b>	<b>880</b>	<b>1</b>
2	163553		Trolley Wheel Girder	650x850x5780	10200	
1	164073	91-101	Trolley Acces Platform	850x850x1660	100	
1	164073	85-90	Ladder	520x2778	50	
1	162606	237-244	Protection	60-600x2200	100	1
2	163553	17,24	Console	70-400x282-1070	300	
1			<b>Box</b>	<b>800x600x700</b>	<b>30</b>	<b>1</b>
1						
1	162598		Weight		20	
1	164110		Weight		20	
1	162586		Weight		10	
1	164116	7	Limit Switch	31-TO-S1,2 W7352	1	
1			Hydraulic pump (hand)		10	
1			Hosepipe for Pumpe			
13			Pipe union			
2	162596	12	Wire	2-700	0,04	
25	163553	37	Nut	M16	0,25	
25	163553	38	Bolt	M16x90	2,5	
25	163553	39	Washer	16	0,25	
12	164073	102	Bolt	M12x40	0,7	
12	164073	103	Washer	13	0,08	
12	164073	104	Nut	M12	0,14	
1	164171	4,20-24	Platte+Limit Switch	50-50x120+31-TO-821	3	
1	164171	5-9	Console	6-215x327x78	2	
2	164171	18,8,9,13	L-square+Limit Switch 31-TO-SO	100x100x8-30	2	
4	164174	1-15	Lubrication Line		7	
2	164063	83	Buffer RUBBER	80	1	
1	162606	245,246	Console	U160-280	7,2	
12	162606	252	Bolt	M12x35 ISO 4017	0,5	
4	162606	253	Bolt	M12x40 ISO 4017	0,1	
16	162606	254	Washer	12	0,15	
16	162606	255	Nut	M12	0,15	
55	162606	256	Bolt	M24x80	27,5	
165	162606	257	Washer	25	1,65	
55	162606	258	Nut	M24	1,1	
8	162583	18	wire	2-700	0,16	
			TARA		910	
			NETTO		10868,47	
			BRUTTO		11778,47	



**KRÁLOVOPOLSKÁ, a.s.**

Křižíkova 68a, 660 90 Brno, CZECH REPUBLIC

**PACKING SHEET**

Contract No.:27015		No:				
Signo LUNG MEN Projekt		DATE: 21.1.2005				
Supplier:		Customer:				
KRÁLOVOPOLSKÁ, a.s.		NKM NOELL GmbH				
Křižíkova 68, 690 00 Brno		Alfred Nobel Strasse 20				
Czech republic		970 80 Würzburg				
		Bundesrepublik Deutschland				
Type of transp Logistic contact						
No.4 Container 434413-3						
2F31-CRN-0001						
PC	Dr Nr	POS.	TITLE	Dimension mm	weight kg	Colli
1			<b>Palette</b>	<b>3140x1600x1900</b>	<b>350</b>	<b>1</b>
1	162577		Bottom Block Main Hoist	1470x1380x2800	9500	
2			Auxiliary Hoist Wire Rope	17-69000	200	
1	164256		Auxiliary Hoist Wire Rope	17-69000	200	
1			<b>Palette</b>	<b>110x1100x1250</b>	<b>50</b>	<b>1</b>
1			Main Hoist Wire Rope	33-286000	1600	
1			<b>Palette</b>	<b>110x1100x1250</b>	<b>50</b>	<b>1</b>
1	162640		Main Hoist Wire Rope	33-286000	1600	
1			<b>Palette</b>	<b>2060x1300x950</b>	<b>120</b>	<b>1</b>
2	162590		Bottom Block Auxiliary Hoist	1900x500x550	950	
				TARA	570	
				NETTO	14050	
				BRUTTO	14620	





**LUNGMEN PROJECT  
RELEASE FOR SHIPMENT  
Product Quality Certificate**

CLIENT :Taiwan Power Company	TPC CONTRACT.NO. 87490011 M04000 AMENDMENT 1&2	SHIPMENT.NO. MS 040-0001
TPC SPECIFICATION NO. 31113.61.1210	REV. 4	ADDENDA N.A.
PRODUCT DESCRIPTION Auxiliary Fuel Building Trolley, 0F31-CRN-0001		
<b>SUPPLIER'S CERTIFICATION</b>		
I HEREBY CERTIFY THAT THE PRODUCT(S) IDENTIFIED HEREIN HAVE BEEN MANUFACTURED UNDER A CONTROLLED PROGRAM AND ARE IN COMPLIANCE WITH THE APPLICABLE CODES, STANDARDS AND SPECIFICATIONS LISTED IN TPC PURCHASE SPECIFICATION REQUIREMENT.		
<u>ITEM NO.</u>	<u>QUANTITY</u>	
0F31-CRN-0001	Fabrication of trolley frames, rope drums, bottom blocks, shafts, axles and miscellaneous machinery equipment, assembly of trolley and cabling on trolley including workshop test.	
Details are listed on attached packing lists for Container No. 217875-3		
(This PQC is shipping release before delivery)		
ALL SUPPORTING DOCUMENTATION REQUIRED BY THE ABOVE REFERENCED DOCUMENTS HAVE BEEN ISSUED TO TPC AUTHORIZED REPRESENTATIVE.		
SIGNED		DATE 20.07.2006
TITLE QA/QC Manager		SUPPLIER NKT No.1
<b>TPC REPRESENTATIVE CERTIFICATION<sup>1</sup></b>		
THIS IS TO CERTIFY THAT EVIDENCE SUPPORTING THE ABOVE SUPPLIERS' CERTIFICATION STATEMENT HAS BEEN REVIEWED AND THAT NO DEVIATIONS FROM QUALITY ASSURANCE REQUIREMENTS HAVE BEEN FOUND UNLESS NOTED BELOW.*		
AUTHORIZED DEVIATIONS AND NONCONFORMANCES HAVE BEEN NOTED BELOW.		
SIGNED		DATE July 20, 2006
TITLE TPC/DNS QA Engineer		RFA NO. -
DEVIATIONS/NONCONFORMANCES FROM PURCHASE ORDER REQUIREMENTS		

1 - The performance of inspections by S&W/TPC shall in no way impair TPC's right to reject nonconforming work or release or discharge the Supplier from any of its obligations under the contract.





**KRÁLOVOPOLSKÁ, a.s.**  
Křížikova 68a, 660 90 Brno, CZECH REPUBLIC

**PACKING SHEET**

Contract No.:27016			No:			
Signo LUNG MEN Projekt Supplier:			DATE: 21.1.2005			
KRÁLOVOPOLSKÁ, a.s. Křížikova 68, 690 00 Brno Czech republic			Customer: NKM NOELL GmbH Alfred Nobel Strasse 20 970 80 Würzburg Bundesrepublik Deutschland			
Type of transport No.5 Container 271875-3 0F31-CRN-0001						
PC	Dr Nr	POS.	TITLE	Dimension mm	weight kg	Colli
1			Palette	1200x1200x1250	55	1
1	164256		Main Hoist Wire Rope	46-115000	1130	
1			Palette	1200x1200x1250	55	1
1	164256		Main Hoist Wire Rope	46-115000	1130	
1			Palette	2410x700x1000	105	1
1	700		Bottom Block Auxiliary Hoist	15MG - 670x2200x550	700	
1			Palette	3180x1900x1900	410	1
1	162640		Bottom Block Main Hoist	150MG-1480x1740x2900	9000	
1	164256	66	Auxiliary Hoist Wire Rope	21-57000	116	
1	164256	67	Auxiliary Hoist Wire Rope	21-56000	114	
1	162668	155-160	Arm	655x466	30,4	
2	162668	168-171	Console	15-345x430	61,8	
2	162669	4,8,36-4	Platform Frame	1280x655	60	
1	162669	19	Metal Sheet	5-500x975	19,1	
4	162668	140	Baffle wheels	15-650x760	232,8	
1			Little Box	750x400x400	20	
1	162662		Weight		20	
1	162649		Weight		10	
1			Hydraulic pump (hand)		20	
1			Hosepipe for Pumpe			
12			Pipe union			
1	162667		Limit Switch	31-TO-S03	0,5	
1	162667		Limit Switch	30-TO-B21	2	
1	162667		Limit Switch	331-TO-S01	0,5	
1	162667		Limit Switch	31-TO-S02	0,5	
1	162667		Limit Switch	31-TO-S21	0,5	
24	162668	189	Bolt	M20x60	1,2	
64	162668	190	Nut	M20	0,6	
40	162668	191	Washer	22	0,4	
12	162668	192	Bolt	M20x60	1,2	
4	164668	193	Bolt	M20x70	0,4	
4	164668	194	Bolt	M16x50	0,4	
4	164668	195	Nut	M16x50	0,1	
4	164668	196	Washer	16	0,2	
4	162646	6	wire	2-700	0,4	
20	162669	53	Bolt	M8x25	0,2	
20	162669	54	Nut	M8	0,1	
20	162669	55	Washer	8,4	0,2	
4	162669	10	Wire	2-700	0,4	
4	162667	31	Bolt	M5x55	0,02	
10	162667	15,151	Nut	M5	0,01	
20	162667	16,161	Washer	5	0,1	
6	162667	19	Bolt	M5x30	0,1	
			TARA			645
			NETTO			12654,13
			BRUTTO			13299,13



**LUNG MEN PROJECT  
RELEASE FOR SHIPMENT  
Product Quality Certificate**

CLIENT : Taiwan Power Company	TPC CONTRACT. NO. 87490011 M04000 <b>AMENDMENT 1 &amp; 2</b>	SHIPMENT. NO. MS 040-0001
TPC SPECIFICATION NO. 31113.61.1210	REV. 4	ADDENDA N.A.
<b>PRODUCT DESCRIPTION</b> Hatch Hoist Trolley, Unit 1, Room 420, 1F31-HOI-0020		
<b><u>SUPPLIER'S CERTIFICATION</u></b>		
I HEREBY CERTIFY THAT THE PRODUCT(S) IDENTIFIED HEREIN HAVE BEEN MANUFACTURED UNDER A CONTROLLED PROGRAM AND ARE IN COMPLIANCE WITH THE APPLICABLE CODES, STANDARDS AND SPECIFICATIONS LISTED IN TPC PURCHASE SPECIFICATION REQUIREMENT.		
<b><u>ITEM NO.</u></b>	<b><u>QUANTITY</u></b>	
1F31-HOI-0020	Fabrication of trolley frames, rope drums, bottom blocks, shafts, axles and miscellaneous machinery equipment, assembly of trolley including workshop test.	
Details are listed on attached packing lists for Container No. 852506-3		
(This PQC is shipping release before delivery)		
ALL SUPPORTING DOCUMENTATION REQUIRED BY THE ABOVE REFERENCED DOCUMENTS HAVE BEEN ISSUED TO TPC		
<b>AUTHORIZED REPRESENTATIVE.</b>		
SIGNED <i>[Signature]</i>	(NKM Noell QS 12)	DATE <i>21.07.2006</i>
TITLE <i>QA/QC Manager</i>		SUPPLIER <i>NKM Noell</i>
<b><u>TPC REPRESENTATIVE CERTIFICATION<sup>1</sup></u></b>		
THIS IS TO CERTIFY THAT EVIDENCE SUPPORTING THE ABOVE SUPPLIERS' CERTIFICATION STATEMENT HAS BEEN REVIEWED AND THAT NO DEVIATIONS FROM QUALITY ASSURANCE REQUIREMENTS HAVE BEEN FOUND UNLESS NOTED BELOW.*		
AUTHORIZED DEVIATIONS AND NONCONFORMANCES HAVE BEEN NOTED BELOW.		
SIGNED <i>Shyh-Kwan Lu</i>		DATE <i>July 20, 2006</i>
TITLE <i>TPC/DNS QA Engineer</i>		RFA NO. <i>-</i>
DEVIATIONS/NONCONFORMANCES FROM PURCHASE ORDER REQUIREMENTS		

1 - The performance of inspections by S&W/TPC shall in no way impair TPC's right to reject nonconforming work or release or discharge the Supplier from any of its obligations under the contract.



**KRÁLOVOPOLSKÁ, a.s.**  
Křižikova 68a, 660 90 Brno, CZECH REPUBLIC

**PACKING SHEET**

Contract No.:27017			No:			
Signo LUNG MEN Projekt Supplier:			DATE: 25.1.2005			
KRÁLOVOPOLSKÁ, a.s. Křižikova 68, 690 00 Brno Czech republic			Customer: NKM NOELL GmbH Alfred Nobel Strasse 20 970 80 Würzburg Bundesrepublik Deutschland			
Type of transpc Logistic kontakt Container No.852506-3 1 F31-HOI-020						
PC	Dr Nr	POS.	TITLE	Dimension mm	weight kg	Colli
1			Palette	3800x2100x1500	420	1
1	162720		of Frame with Hoist Winch	2000x1200x3200	4400	
1			Palette	1900x1900x1050	98	1
1	162701		1 of Bottom Block	470x400x890	250	
1	162719		1 of Trolley	540x1630x1750	1200	
1	162706	10	1 of Hatch Hoist Wire Rope	φ12-119000	85	
1	162706	11	1 of Hatch Hoist Wire Rope	φ12-119000	85	
1			BOX	1580X1150X1100	122	1
1	162720		Frame	60x40 - 250x745x1115	50	
1	162718	6-11	Trolley travel - limit switch+limit switch 31+TO-S01	200x300x230	3,75	
1	162718	6-11	Console	50-300x1500	1,75	
1			Hydraulic oil	HLP 46 20L	20	
1	162719	63-69	Jib		45	
1	162719		Limit switch 22+TO-S05+weight+cable stool+pulley		10	
1	162719		Limit switch 22+BGR-B22		3	
2	162720	1	Platte	30-380x420	75,2	
12	162720	2	Platte	40-80	3	
4	162720	3	Platte	40-40	0,75	
8	162720	5	Platte	5-300x300	28	
8	162720	6	Platte	2-300x300	11,2	
8	162720	7	Platte	1-300x300	5,75	
2	162720	8	Platte	30-420x420	83	
16	162720	9	Bolt	M16x70	2,4	
16	162720	10	Washer	17	0,2	
16	162720	16	Tube	20x1,5-30	0,3	
16	162720	17	Washer	18R	1,45	
16	162720	71	Bolt	M16x75	2,55	
16	162720	72	Bolt	M16x65	2,33	
8	162720	88	Bolt	M10x40 DIN 6912	0,3	
16	162720	89	Washer	10 ISO 7089	0,15	
20	162720	90	Nut	M10 ISO 7040	0,7	
4	162708	11	Wire	2-400	0,2	
			TARA		640	
			NETTO		6500,48	
			BRUTTO		7140,48	



**LUNG MEN PROJECT  
RELEASE FOR SHIPMENT  
Product Quality Certificate**

CLIENT :Taiwan Power Company	TPC CONTRACT.NO. 87490011 M04000 AMENDMENT 1 & 2	SHIPMENT.NO. MS 040-000
TPC SPECIFICATION NO. 31113.61.1210	REV. 4	ADDENDA N.A.
<b>PRODUCT DESCRIPTION</b> Hatch Hoist Trolley, Unit 2, Room 420, 2F31-HOI-0020		
<b><u>SUPPLIER'S CERTIFICATION</u></b>		
I HEREBY CERTIFY THAT THE PRODUCT(S) IDENTIFIED HEREIN HAVE BEEN MANUFACTURED UNDER A CONTROLLED PROGRAM AND ARE IN COMPLIANCE WITH THE APPLICABLE CODES, STANDARDS AND SPECIFICATIONS LISTED IN TPC PURCHASE SPECIFICATION REQUIREMENT.		
<u>ITEM NO.</u>	<u>QUANTITY</u>	
2F31-HOI-0020	Fabrication of trolley frames, rope drums, bottom blocks, shafts, axles and miscellaneous machinery equipment, assembly of trolley including workshop test.	
Details are listed on attached packing lists for Container No. 245068-7		
(This PQC is shipping release before delivery)		
ALL SUPPORTING DOCUMENTATION REQUIRED BY THE ABOVE REFERENCED DOCUMENTS HAVE BEEN ISSUED TO TPC		
<b>AUTHORIZED REPRESENTATIVE.</b>		
SIGNED <i>[Signature]</i>	(NKM Noell) QS 12	DATE <i>20.07.2006</i>
TITLE <i>QA/QC Manager</i>		SUPPLIER <i>WAT Wall</i>
<b><u>TPC REPRESENTATIVE CERTIFICATION<sup>1</sup></u></b>		
THIS IS TO CERTIFY THAT EVIDENCE SUPPORTING THE ABOVE SUPPLIERS' CERTIFICATION STATEMENT HAS BEEN REVIEWED AND THAT NO DEVIATIONS FROM QUALITY ASSURANCE REQUIREMENTS HAVE BEEN FOUND UNLESS NOTED BELOW."		
AUTHORIZED DEVIATIONS AND NONCONFORMANCES HAVE BEEN NOTED BELOW.		
SIGNED <i>Shyh-Kwei Lo</i>		DATE <i>July 20, 2006</i>
TITLE <i>TPC/QNS QA Engineer</i>		RFA NO. <i>-</i>
DEVIATIONS/NONCONFORMANCES FROM PURCHASE ORDER REQUIREMENTS		

1 - The performance of inspections by S&W/TPC shall in no way impair TPC's right to reject nonconforming work or release or discharge the Supplier from any of its obligations under the contract.



**KRÁLOVOPOLSKÁ, a.s.**  
Křižíkova 68a, 660 90 Brno, CZECH REPUBLIC

**PACKING SHEET**

Contract No.:27017			No:			
Signo LUNG MEN Projekt			DATE: 25.1.2005			
Supplier: KRÁLOVOPOLSKÁ, a.s. Křižíkova 68, 690 00 Brno Czech republic			Customer: NKM NOELL GmbH Alfred Nobel Strasse 20 970 80 Würzburg Bundesrepublik Deutschland			
Type of transpc Logistic kontakt Container No.245068-7 2 F31-HOI-020						
PC	Dr Nr	POS.	TITLE	Dimension mm	weight kg	Colli
1			Palette	3800x2100x1500	420	1
1	162720		of Frame with Hoist Winch	2000x1200x3200	4400	
1			Palette	1900x1900x1050	98	1
1	162701		1 of Bottom Block	470x400x890	250	
1	162719		1 of Trolley	540x1630x1750	1200	
1	162706	10	1 of Hatch Hoist Wire Rope	φ12-119000	85	
1	162706	11	1 of Hatch Hoist Wire Rope	φ12-119000	85	
1			BOX	1580x1150x1100	122	1
1	162720		Frame	60x40 - 250x745x1115	50	
1	162718	6-11	Trolley travel - limit switch+limit switch 31+TO-S01	200x300x230	3,75	
1	162718	6-11	Console	50-300x1500	1,75	
1	162719	63-69	Jib		45	
1	162719		Limit switch 22+TO-S05+weight+cable stool+pulley		10	
1	162719		Limit switch 22+BGR-B22		3	
2	162720	1	Platte	30-380x420	75,2	
12	162720	2	Platte	40-80	3	
4	162720	3	Platte	40-40	0,75	
8	162720	5	Platte	5-300x300	28	
8	162720	6	Platte	2-300x300	11,2	
8	162720	7	Platte	1-300x300	5,75	
2	162720	8	Platte	30-420x420	83	
16	162720	9	Bolt	M16x70	2,4	
16	162720	10	Washer	17	0,2	
16	162720	16	Tube	20x1,5-30	0,3	
16	162720	17	Washer	18R	1,45	
16	162720	71	Bolt	M16x75	2,55	
16	162720	72	Bolt	M16x65	2,33	
8	162720	88	Bolt	M10x40 DIN 6912	0,3	
16	162720	89	Washer	10 ISO 7089	0,15	
20	162720	90	Nut	M10 ISO 7040	0,7	
4	162708	11	Wire	2-400	0,2	
			TARA		640	
			NETTO		6472,98	
			BRUTTO		7112,98	



**LUNGMEN PROJECT**  
**RELEASE FOR SHIPMENT**  
**Product Quality Certificate**

CLIENT :Taiwan Power Company	TPC CONTRACT. NO. 87490011 M04000 AMENDMENT 1 & 2	SHIPMENT. NO. MS 040-0001								
TPC SPECIFICATION NO. 31113.61.1210	REV. 4	ADDENDA N.A.								
PRODUCT DESCRIPTION Hatch Hoist Trolley, Unit 1, Room 430, 1F31-HOI-0021										
<b><u>SUPPLIER'S CERTIFICATION</u></b>										
I HEREBY CERTIFY THAT THE PRODUCT(S) IDENTIFIED HEREIN HAVE BEEN MANUFACTURED UNDER A CONTROLLED PROGRAM AND ARE IN COMPLIANCE WITH THE APPLICABLE CODES, STANDARDS AND SPECIFICATIONS LISTED IN TPC PURCHASE SPECIFICATION REQUIREMENT.										
<b><u>ITEM NO.</u></b>	<b><u>QUANTITY</u></b>									
1F31-HOI-0021	Fabrication of trolley frames, rope drums, bottom blocks, shafts, axles and miscellaneous machinery equipment, assembly of trolley including workshop test.									
	Details are listed on attached packing lists for Container No. 217069-1									
	(This PQC is shipping release before delivery)									
ALL SUPPORTING DOCUMENTATION REQUIRED BY THE ABOVE REFERENCED DOCUMENTS HAVE BEEN ISSUED TO TPC										
<b>AUTHORIZED REPRESENTATIVE.</b>										
SIGNED <i>[Signature]</i>		DATE <i>2007.2.2006</i>								
TITLE <i>QA/QC Manager</i>		SUPPLIER <i>NKT Noell</i>								
<b><u>TPC REPRESENTATIVE CERTIFICATION<sup>1</sup></u></b>										
THIS IS TO CERTIFY THAT EVIDENCE SUPPORTING THE ABOVE SUPPLIERS' CERTIFICATION STATEMENT HAS BEEN REVIEWED AND THAT NO DEVIATIONS FROM QUALITY ASSURANCE REQUIREMENTS HAVE BEEN FOUND UNLESS NOTED BELOW."										
<table border="1" style="width: 100%; height: 60px;"> <tr> <td style="width: 5%;"></td> <td>AUTHORIZED DEVIATIONS AND NONCONFORMANCES HAVE BEEN NOTED BELOW.</td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </table>				AUTHORIZED DEVIATIONS AND NONCONFORMANCES HAVE BEEN NOTED BELOW.						
	AUTHORIZED DEVIATIONS AND NONCONFORMANCES HAVE BEEN NOTED BELOW.									
SIGNED <i>[Signature]</i>		DATE <i>July 20, 2006</i>								
TITLE <i>TPC/DNS</i>		RFA NO. <i>-</i>								
DEVIATIONS/NONCONFORMANCES FROM PURCHASE ORDER REQUIREMENTS										

1 - The performance of inspections by S&W/TPC shall in no way impair TPC's right to reject nonconforming work or release or discharge the Supplier from any of its obligations under the contract.



**KRÁLOVOPOLSKÁ, a.s.**  
Křížkova 68a, 660 90 Brno, CZECH REPUBLIC

**PACKING SHEET**

Contract No.:27017			No:			
Signo LUNG MEN Projekt			DATE: 25.1.2005			
Supplier: KRÁLOVOPOLSKÁ, a.s. Křížkova 68, 690 00 Brno Czech republic			Customer: NKM NOELL GmbH Alfred Nobel Strasse 20 970 80 Würzburg Bundesrepublik Deutschland			
Type of transport Logistic contact Container No.217069-1 1 F31-HOI-021						
PC	Dr Nr	POS.	TITLE	Dimension mm	weight kg	Colli
1			Palette	3800x2100x1500	420	1
1	162720		of Frame with Hoist Winch	2000x1200x3200	4400	
1			Palette	1900x1900x1050	98	1
1	162701		1 of Bottom Block	470x400x890	250	
1	162719		1 of Trolley	540x1630x1750	1200	
1	162706	10	1 of Hatch Hoist Wire Rope	φ12-119000	85	
1	162706	11	1 of Hatch Hoist Wire Rope	φ12-119000	85	
1			BOX	1580X1150X1100	122	1
1	162720		Frame	60x40 - 250x745x1115	50	
1	162718	6-11	Trolley travel - limit switch+limit switch 31+TO-S01	200x300x230	3,75	
1	162718	6-11	Console	50-300x1500	1,75	
1			Hvdraulic oil	HLP 46 20L	20	
1	162719	63-69	Jib		45	
1	162719		Limit switch 22+TO-S05+weight+cable stool+pulley		10	
1	162719		Limit switch 22+BGR-B22		3	
2	162720	1	Platte	30-380x420	75,2	
12	162720	2	Platte	40-80	3	
4	162720	3	Platte	40-40	0,75	
8	162720	5	Platte	5-300x300	28	
8	162720	6	Platte	2-300x300	11,2	
8	162720	7	Platte	1-300x300	5,75	
2	162720	8	Platte	30-420x420	83	
16	162720	9	Bolt	M16x70	2,4	
16	162720	10	Washer	17	0,2	
16	162720	16	Tube	20x1,5-30	0,3	
16	162720	17	Washer	18R	1,45	
16	162720	71	Bolt	M16x75	2,55	
16	162720	72	Bolt	M16x65	2,33	
8	162720	88	Bolt	M10x40 DIN 6912	0,3	
16	162720	89	Washer	10 ISO 7089	0,15	
20	162720	90	Nut	M10 ISO 7040	0,7	
4	162708	11	Wire	2-400	0,2	
			TARA		640	
			NETTO		6492,98	
			BRUTTO		7132,98	



**LUNG MEN PROJECT  
RELEASE FOR SHIPMENT  
Product Quality Certificate**

CLIENT :Taiwan Power Company	TPC CONTRACT.NO. 87490011 M04000 AMENDMENT 1 & 2	SHIPMENT.NO. MS 040-000
TPC SPECIFICATION NO. 31113.61.1210	REV. 4	ADDENDA N.A.
PRODUCT DESCRIPTION Hatch Hoist Trolley, Unit 2, Room 430, 2F31-HOI-0021		
<b><u>SUPPLIER'S CERTIFICATION</u></b>		
I HEREBY CERTIFY THAT THE PRODUCT(S) IDENTIFIED HEREIN HAVE BEEN MANUFACTURED UNDER A CONTROLLED PROGRAM AND ARE IN COMPLIANCE WITH THE APPLICABLE CODES, STANDARDS AND SPECIFICATIONS LISTED IN TPC PURCHASE SPECIFICATION REQUIREMENT.		
<b><u>ITEM NO.</u></b>	<b><u>QUANTITY</u></b>	
2F31-HOI-0021	Fabrication of trolley frames, rope drums, bottom blocks, shafts, axles and miscellaneous machinery equipment, assembly of trolley including workshop test.	
Details are listed on attached packing lists for Container No. 212493-1		
(This PQC is shipping release before delivery)		
ALL SUPPORTING DOCUMENTATION REQUIRED BY THE ABOVE REFERENCED DOCUMENTS HAVE BEEN ISSUED TO TPC		
<b>AUTHORIZED REPRESENTATIVE.</b>		
SIGNED <i>[Signature]</i>	(NKM Noell) QS 12	DATE <i>20.07.2006</i>
TITLE <i>QA/QC Manager</i>		SUPPLIER <i>UAT Noell</i>
<b><u>TPC REPRESENTATIVE CERTIFICATION<sup>1</sup></u></b>		
THIS IS TO CERTIFY THAT EVIDENCE SUPPORTING THE ABOVE SUPPLIERS' CERTIFICATION STATEMENT HAS BEEN REVIEWED AND THAT NO DEVIATIONS FROM QUALITY ASSURANCE REQUIREMENTS HAVE BEEN FOUND UNLESS NOTED BELOW."		
AUTHORIZED DEVIATIONS AND NONCONFORMANCES HAVE BEEN NOTED BELOW.		
SIGNED <i>[Signature]</i>		DATE <i>July 20, 2006</i>
TITLE <i>TPC/DNS QA Engineer</i>		RFA NO. <i>—</i>
DEVIATIONS/NONCONFORMANCES FROM PURCHASE ORDER REQUIREMENTS		


1 - The performance of inspections by S&W/TPC shall in no way impair TPC's right to reject nonconforming work or release or discharge the Supplier from any of its obligations under the contract.





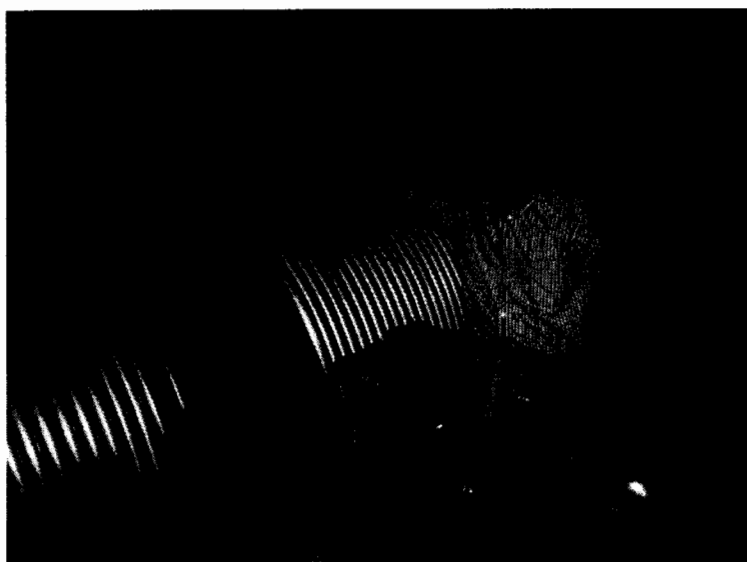
**KRÁLOVOPOLSKÁ, a.s.**  
Křižíkova 68a, 660 90 Brno, CZECH REPUBLIC

### PACKING SHEET

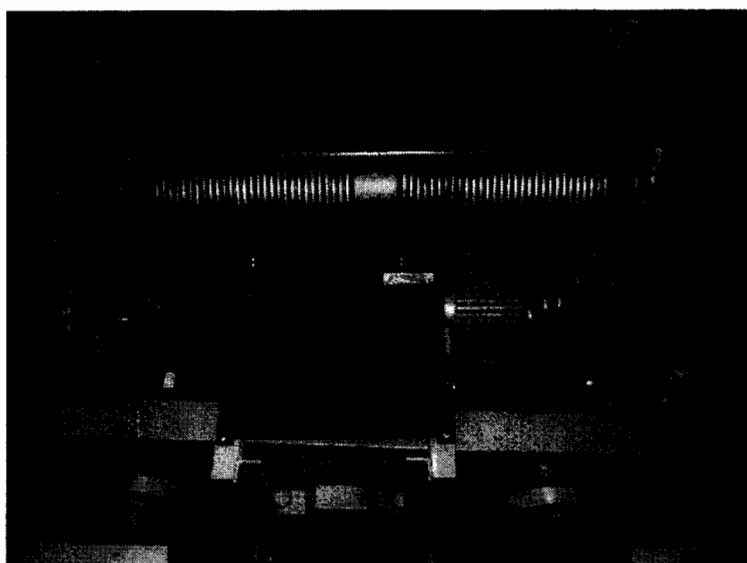
Contract No.:27017			No:			
Signo LUNG MEN Projekt Supplier: KRÁLOVOPOLSKÁ, a.s. Křižíkova 68, 690 00 Brno Czech republic			DATE: 25.1.2005 Customer: NKM NOELL GmbH Alfred Nobel Strasse 20 970 80 Würzburg Bundesrepublik Deutschland			
Type of transp Logistic kontakt Container No.212493-1 2 F31-HOI-021						
PC	Dr Nr	POS.	TITLE	Dimension mm	weight kg	Colli
1			<b>Palette</b>	<b>3800x2100x1500</b>	<b>420</b>	<b>1</b>
1	162720		of Frame with Hoist Winch	2000x1200x3200	4400	
1			<b>Palette</b>	<b>1900x1900x1050</b>	<b>98</b>	<b>1</b>
1	162701		1 of Bottom Block	470x400x890	250	
1	162719		1 of Trolley	540x1630x1750	1200	
1	162706	10	1 of Hatch Hoist Wire Rope	φ12-119000	85	
1	162706	11	1 of Hatch Hoist Wire Rope	φ12-119000	85	
1			<b>BOX</b>	<b>1580x1150x1100</b>	<b>122</b>	<b>1</b>
1	162720		Frame	60x40 - 250x745x1115	50	
1	162718	6-11	Trolley travel - limit switch+limit switch 31+TO-S01	200x300x230	3,75	
1	162718	6-11	Console	50-300x1500	1,75	
1	162719	63-69	Jib		45	
1	162719		Limit switch 22+TO-S05+weight+cable stool+pulley		10	
1	162719		Limit switch 22+BGR-B22		3	
2	162720	1	Platte	30-380x420	75,2	
12	162720	2	Platte	40-80	3	
4	162720	3	Platte	40-40	0,75	
8	162720	5	Platte	5-300x300	28	
8	162720	6	Platte	2-300x300	11,2	
8	162720	7	Platte	1-300x300	5,75	
2	162720	8	Platte	30-420x420	83	
16	162720	9	Bolt	M16x70	2,4	
16	162720	10	Washer	17	0,2	
16	162720	16	Tube	20x1,5-30	0,3	
16	162720	17	Washer	18R	1,45	
16	162720	71	Bolt	M16x75	2,55	
16	162720	72	Bolt	M16x65	2,33	
8	162720	88	Bolt	M10x40 DIN 6912	0,3	
16	162720	89	Washer	10 ISO 7089	0,15	
20	162720	90	Nut	M10 ISO 7040	0,7	
4	162708	11	Wire	2-400	0,2	
			TARA		640	
			NETTO		6472,98	
			BRUTTO		7112,98	



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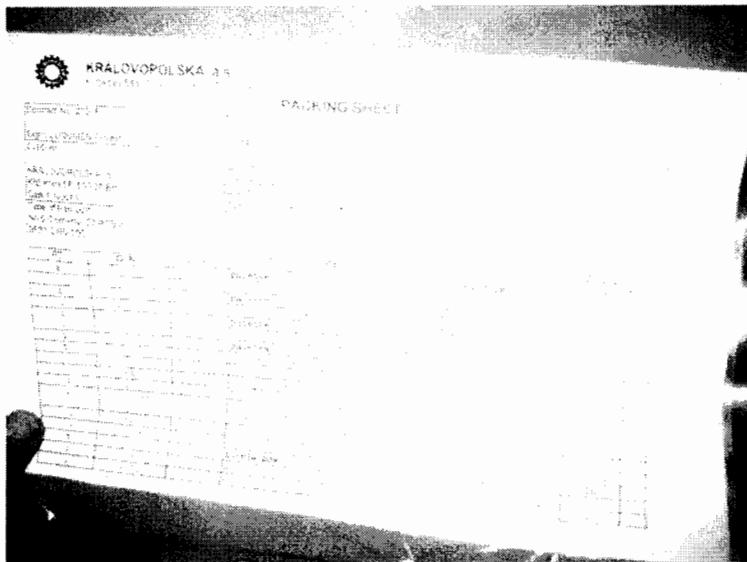
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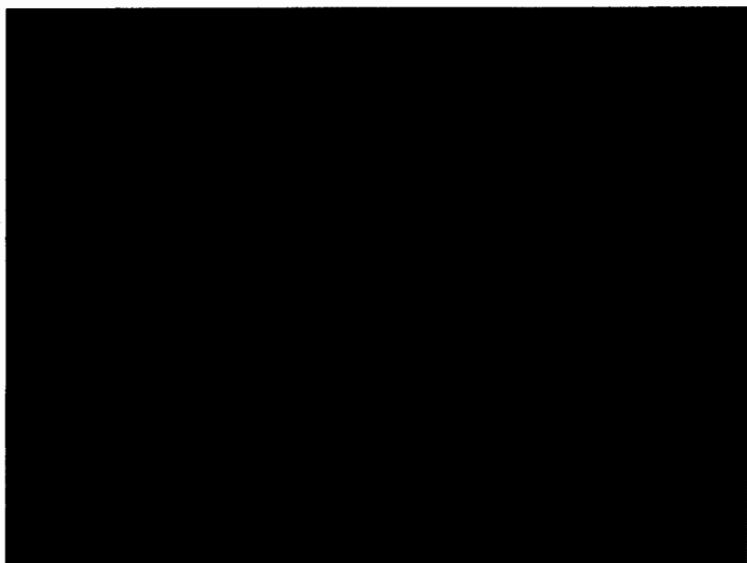
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226\_2622

# MS041A EDG ASME Sec. III Pumps—Document Review Status

No	DNE, DNS	Object Name	Title	Review Status	Originating Letter
4	DNS	12801.MS041.4-08003	REV. 0; ASME SECTION III PUMPS INSPECTION AND TEST PLAN	1	SEM-SWT-MS041A-0500, 1445
5	DNS	12801.MS041.4-08003	REV. 2; ASME SECTION III FUEL OIL TRANSFER PUMPS INSPECTION & TEST PLAN	1	SEM-SWT-MS041A-0938
19	DNS	12801.MS041.4-08017	REV. 0; ASME III CLASS 3 - PUMPS MANUFACTURING AND INSPECTION TEST PLAN	4	SEM-SWT-MS041A-0246, 1445(Cancelled, replaced by individual type of pump inspection plan)
30	DNS	12801.MS041.4-08037	REV. 2; LUBE OIL BACK UP PUMPS ASME III SECTION 3 PUMPS INSPECTION & TEST PLAN(QUALITY PLAN)	1	SEM-SWT-MS041A-0938
32	DNS	12801.MS041.4-08040	REV. 2; ASME III SECTION 3 PUMPS MOTOR QUALITY ASSURANCE PLANS	1	SEM-SWT-MS041A-1019, 1154-R1, 1311
118	M	12801.MS041.5-02055	REV. 1; CW KEEP-WARM PUMP GENERAL OUTLINE DRAWING	1	SEM-SWT-MS041A-0895
120	M	12801.MS041.5-02057	REV. 2; FUEL OIL TRANSFER PUMP GENERAL OUTLINE DRAWING	4	SEM-SWT-MS041A-1010, 1261, 1467, 1504
121	M	12801.MS041.5-02058	REV. 1; LUBE OIL BACK UP PUMP GENERAL OUTLINE DRAWING	1	SEM-SWT-MS041A-0895
124	M	12801.MS041.5-02061	REV. 1; COOLING WATER KEEP WARM PUMP 1/2R21 P0010A/B/C LOCATION :- INDOOR DRAWING	1	SEM-SWT-MS041A-0826
125	M	12801.MS041.5-02062	REV. 1; FUEL OIL BOOSTER PUMP 1/2R21 P0003A/B/C LOCATION :- INDOOR DRAWING	1	SEM-SWT-MS041A-0826
126	M	12801.MS041.5-02063	REV. 1; FUEL OIL TRANSFER PUMP 1/2R21 P0001A1/B1/C1 1/2R21 P0001A2/B2/C2 LOCATION :- INDOOR DRAWING	1	SEM-SWT-MS041A-0826
127	M	12801.MS041.5-02064	REV. 2; LUBE OIL BACKUP PUMP 1/2R21 P0012A/B/C LOCATION :- INDOOR DRAWING	1	SEM-SWT-MS041A-0895
133	M	12801.MS041.5-02076	REV. 1; ASME III CLASS 3 SEPARATOR AND STRAINER FUEL OIL TRANSFER PUMP SYSTEM OUTLINE DRAWING	1	SEM-SWT-MS041A-0307, 1174
205	M	12801.MS041.5-02180	REV. 1; P-0004* FO Drain Return Pump Outline DWG	2	SEM-SWT-MS041A-1160, 1256
243	E	12801.MS041.5-03041	REV. 6; DC MOTOR STARTER KEEP WARM LO PUMP 13* P-0013* SCHEMATIC DIAGRAM	1	SEM-SWT-MS041A-0934, 1206, 1567, 1692
244	E	12801.MS041.5-03042	REV. 5; DC MOTOR STARTER KEEP WARM LO PUMP P-0013* 1R21-PL-2013* GENERAL ARRANGEMENT DRAWING	0	SEM-SWT-MS041A-1072, 1231, 1710
245	E	12801.MS041.5-03043	REV. 7; DC MOTOR STARTER FUEL OIL BOOSTER PUMP 3* P-0003* SCHEMATIC DIAGRAM	1	SEM-SWT-MS041A-0934, 1209, 1275, 1325, 1568, 1692
246	E	12801.MS041.5-03044	REV. 4; DC MOTOR STARTER FUEL OIL BOOSTER PUMP P-0003* 1R21-PL-2012* GENERAL ARRANGEMENT DRAWING	1	SEM-SWT-MS041A-0970, 1231, 1710
257	M	12801.MS041.6-02003	REV. 4; PUMPS DATA SHEETS	1	SEM-SWT-MS041A-1136
269	P	12801.MS041.6-02017	REV. 4; DG FO TRANSFER PUMP STRAINERS DG FO TRANSFER PUMP SEPARATORS DATA SHEETS	2	SEM-SWT-MS041A-1034/1052/1430/1449
299	M	12801.MS041.6-02050	REV. 0; ASME III SECTION 3 PUMPS POST WELD HEAT TREATMENT PROCEDURE	1	SEM-SWT-MS041A-0199/1012
300	M	12801.MS041.6-02051	REV. 2; ASME III SECTION 3 PUMPS LIQUID PENETRANT EXAMINATION PROCEDURE	1	SEM-SWT-MS041A-0826
301	M	12801.MS041.6-02052	REV. 2; ASME III SECTION 3 PUMPS VISUAL EXAMINATION OF WELDS	1	SEM-SWT-MS041A-0826
302	M	12801.MS041.6-02053	REV. 2; ASME III SECTION 3 PUMPS MAGNETIC PARTICLE EXAMINATION PROCEDURE	1	SEM-SWT-MS041A-0826
303	M	12801.MS041.6-02054	REV. 2; ASME III SECTION 3 PUMPS ULTRASONIC EXAMINATION PROCEDURE	1	SEM-SWT-MS041A-0826
304	M	12801.MS041.6-02055	REV. 2; ASME III SECTION III SUBSECTION ND PUMPS PRESERVATION & PACKING PROCEDURE	1	SEM-SWT-MS041A-1009, 1241
305	M	12801.MS041.6-02056	REV. 2; ASME III SECTION III SUBSECTION ND PUMPS PUMP ENVIRONMENTAL AND SEISMIC QUALIFICATION PROCEDURE	1	SEM-SWT-MS041A-1127
306	M	12801.MS041.6-02057	REV. 1; COOLING WATER KEEP WARM PUMPS ASME III SECTION III SUBSECTION ND ESTIMATED PERFORMANCE CURVE	1	SEM-SWT-MS041A-0984
307	M	12801.MS041.6-02062	REV. 2; COOLING WATER KEEP WARM PUMPS ASME III SECTION III SUBSECTION ND HYDRAULIC PERFORMANCE TEST PROCEDURE	1	SEM-SWT-MS041A-1008
308	M	12801.MS041.6-02063	REV. 0; FUEL OIL TRANSFER PUMPS ASME III SECTION III SUBSECTION ND HYDRAULIC PERFORMANCE TEST PROCEDURE	1	SEM-SWT-MS041A-0389

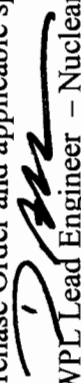
No	DNE, DNS	Object Name	Title	Review Status	Originating Letter
312	M	12801.MS041. 6-02067	REV. 2; LUBE OIL BACKUP PUMPS ASME III SECTION III SUBSECTION ND HYDRAULIC PERFORMANCE TEST PROCEDURE	1	SEM-SWT-MS041A-0895
316	M	12801.MS041. 6-02071	REV. 1; LUBE OIL BACKUP PUMPS ASME III SECTION III SUBSECTION ND ESTIMATED PERFORMANCE CURVE	1	SEM-SWT-MS041A-0826
349	M	12801.MS041. 6-02106	REV. 1; ASME CLASS 3 HORIZONTAL POSITIVE DISPLACEMENT AC AND DC KEEP WARM LUBE OIL PUMPS DESIGN REPORT-PRESSURE BOUNDARY	1	SEM-SWT-MS041A-0826
350	M	12801.MS041. 6-02107	REV. 1; ASME CLASS 3 HORIZONTAL POSITIVE DISPLACEMENT LUBE OIL BACK-UP PUMPS DESIGN REPORT-PRESSURE BOUNDARY	1	SEM-SWT-MS041A-0826
351	M	12801.MS041. 6-02108	REV. 1; ASME CLASS 3 VERTICAL CENTRIFUGAL FUEL OIL TRANSFER PUMP DESIGN REPORT-PRESSURE BOUNDARY	1	SEM-SWT-MS041A-0826
352	M	12801.MS041. 6-02109	REV. 1; ASME CLASS 3 HORIZONTAL POSITIVE DISPLACEMENT DC FUEL OIL BOOSTER PUMPS DESIGN REPORT-PRESSURE BOUNDARY	1	SEM-SWT-MS041A-0826
353	M	12801.MS041. 6-02110	REV. 1; ASME CLASS 3 HORIZONTAL CENTRIFUGAL COOLING WATER KEEP WARM PUMPS DESIGN REPORT-PRESSURE BOUNDARY	1	SEM-SWT-MS041A-0826
355	M	12801.MS041. 6-02112	REV. 0; LUBE OIL BACKUP PUMPS TAG NOS: 1/2 R21 P0012A/B/C, ASME SECTION III SUBSECTION NF DESIGN REPORT - COMPONENT SUPPORT JUSTIFICATION	1	SEM-SWT-MS041A-1128
356	M	12801.MS041. 6-02113	REV. 1; ASME III Pump - Vertical Fuel Oil Transfer Pump Component Support Report (ASME III-NF)	1	SEM-SWT-MS041A-1172/1442
357	M	12801.MS041. 6-02114	REV. 0; ASME III Section 3 Fuel Oil Booster Pumps Design Report (P00003A/B/C) - Component support Justification	1	SEM-SWT-MS041A-1159, 1235
358	M	12801.MS041. 6-02115	REV. 1; COOLING WATER KEEP WARM PUMPS TAG NOS: 1/2 R21 P0010A/B/C, ASME SECTION III SUBSECTION NF DESIGN REPORT - COMPONENT SUPPORT JUSTIFICATION	1	SEM-SWT-MS041A-1128
360	E	12801.MS041. 6-02117	REV. 1; ASME III SECTION 3 PUMPS MOTOR SEISMIC QUALIFICATION ANALYSIS PROCEDURE (IEEE 344)	1	SEM-SWT-MS041A-0923, 1298
361	M	12801.MS041. 6-02121	REV. 0; ASME III SUBSECTION ND FUEL OIL TRANSFER PUMP DESIGN REPORT - SEISMIC & OPERABILITY JUSTIFICATION	2	SEM-SWT-MS041A-0899
362	M	12801.MS041. 6-02123	REV. 1; ASME III SUBSECTION ND COOLING WATER KEEP WARM PUMPS DESIGN REPORT - SEISMIC & OPERABILITY JUSTIFICATION	1	SEM-SWT-MS041A-0984
363	M	12801.MS041. 6-02130	REV. 0; ASME III Fuel Oil Transfer Pumps Design Report- Missil Containment Analysis	1	SEM-SWT-MS041A-1221, 1260, 1322
364	M	12801.MS041. 6-02132	REV. 0; ASME III PUMP REPAIR WELDING OF CARBON STEEL WITHOUT POST WELD HEAT TREATMENT	1	SEM-SWT-MS041A-0389/1011
365	M	12801.MS041. 6-02133	REV. 0; ASME III PUMP REPAIR WELDING OF CARBON STEEL WITH POST WELD HEAT TREATMENT	1	SEM-SWT-MS041A-0389/1011
366	M	12801.MS041. 6-02134	REV. 0; EMERGENCY DIESEL GENERATOR PUMPS ASME III SECTION 3 PUMPS CARBON STEEL GROOVE WELDS	1	SEM-SWT-MS041A-0389/1011
367	M	12801.MS041. 6-02135	REV. 0; ASME III SECTION 3 PUMPS ATTACHEMENT OF THERMOCOUPLES BY CAPACITIVES DISCHARGE WELDING	1	SEM-SWT-MS041A-0389
368	M	12801.MS041. 6-02136	REV. 0; ASME III SECTION 3 PUMPS REPAIR OF AUSTENITIC STAINLESS STEEL	1	SEM-SWT-MS041A-0389/1011
369	M	12801.MS041. 6-02138	REV. 0; ASME III SECTION 3 PUMPS CARBON STEEL FILLET & GROOVE WELDS	1	SEM-SWT-MS041A-0389/1011
370	M	12801.MS041. 6-02139	REV. 0; ASME III SECTION 3 PUMPS CARBON STEEL SOCKET FILLET WELDS	1	SEM-SWT-MS041A-0389/1011
381	P	12801.MS041. 6-02152	REV. 1; FUEL OIL DRAIN RETURN PUMP STRAINER DATA SHEET	1	SEM-SWT-MS041A-1136
429	J	12801.MS041. 6-02207	REV. 2; THERMOSTATIC VALVES, PRESSURE CONTROL / REDUCING VALVES, PUMP STRAINERS AND SEPARATORS QUALIFICATION PLAN	1	SEM-SWT-MS041A-0862, 1192
469	M	12801.MS041. 6-02250	REV. 1; CHEMICAL POT FEEDER PUMP 1/2 R21 - P0014 A/B/C OPERATION, INSTALLATION & MAINTENANCE MANUAL	1	SEM-SWT-MS041A-0855
478	E	12801.MS041. 6-02259	REV. 1; ASME III SECTION 3 PUMPS AC MOTOR QUALIFICATIO PLAN SUMMARY	1	SEM-SWT-MS041A-0899, 1299
479	E	12801.MS041. 6-02260	REV. 1; ASME III SECTION 3 PUMPS DC MOTOR QUALIFICATIO PLAN SUMMARY	1	SEM-SWT-MS041A-0899, 1299

No	DNE, DNS	Object Name	Title	Review Status	Originating Letter
480	M	12801.MS041.6-02261	REV. 1; ASME III SECTION 3 PUMPS PRESSURE TESTING OF COMPONENTS	1	SEM-SWT-MS041A-0899, 1509
481	M	12801.MS041.6-02262	REV. 0; ASME III SECTION 3 PUMPS PRESSURE TESTING OF COMPONENTS TECHNIQUE SHEET	1	SEM-SWT-MS041A-0899
482	M	12801.MS041.6-02263	REV. 0; ASME III SECTION 3 PUMPS HYDROSTATIC TESTING OF COMPONENTS	1	SEM-SWT-MS041A-0899
483	M	12801.MS041.6-02264	REV. 1; ASME III SECTION 3 PUMPS COOLING WATER KEEP WARM PUMPS SPEED TORQUE CURVE	2	SEM-SWT-MS041A-0984
493	M	12801.MS041.6-02275	REV. 0; COOLING WATER KEEP WARM PUMP DESIGN REPORT-COMPONENTS SUPPORT JUSTIFICATION	1	SEM-SWT-MS041A-0985
494	M	12801.MS041.6-02276	REV. 0; COOLING WATER KEEP WARM PUMP DESIGN REPORT-MISSILE CONTAINMENT ANALYSIS	1	SEM-SWT-MS041A-0985
495	E	12801.MS041.6-02277	REV. 1; ASME III LUBE OIL KEEP WARM PUMP MOTOR TEST PROCEDURE	1	SEM-SWT-MS041A-1019, 1242
496	E	12801.MS041.6-02278	REV. 1; COOLING WATER KEEP PUMP MOTOR TEST PROCEDURE	1	SEM-SWT-MS041A-1019, 1242
497	E	12801.MS041.6-02279	REV. 1; FUEL OIL TRANSFER PUMP MOTOR TEST PROCEDURE	1	SEM-SWT-MS041A-1019, 1242
498	E	12801.MS041.6-02280	REV. 1; LUBE OIL BACK-UP PUMP MOTOR TEST PROCEDURE	1	SEM-SWT-MS041A-1019, 1242
499	E	12801.MS041.6-02281	REV. 1; ASME III SECTION 3 PUMPS DC LUBE OIL KEEP WARM PUMP / DC FUEL OIL BOOSTER PUMP - MOTOR TEST PROCEDURE	2	SEM-SWT-MS041A-1029, 1243
500	E	12801.MS041.6-02282	REV. 1; ASME III SECTION 3 PUMPS MOTOR PAINT PROCEDURE	1	SEM-SWT-MS041A-1029, 1155, 1243
501	M	12801.MS041.6-02283	REV. 0; ASME III SECTION 3 PUMPS PAINTING PROCEDURE (PUMPS)	1	SEM-SWT-MS041A-1040
502	E	12801.MS041.6-02284	REV. 0; ASME III SECTION 3 PUMPS AC VERTICAL FUEL OIL TRANSFER PUMPS MOTOR TORQUE/CURRENT - SPEED CURVE	2	SEM-SWT-MS041A-1040
503	E	12801.MS041.6-02285	REV. 0; ASME III SECTION 3 PUMPS AC COOLING WATER KEEP WARM PUMPS MOTOR TORQUE/CURRENT - SPEED CURVE	2	SEM-SWT-MS041A-1040
504	E	12801.MS041.6-02286	REV. 0; ASME III SECTION 3 PUMPS AC LUBE OIL BACK-UP PUMPS MOTOR TORQUE/CURRENT - SPEED CURVE	1	SEM-SWT-MS041A-1040
514	DNS	12801.MS041.6-02297	REV. 1; QRL for Fuel Oil Transfer Pump	1	SEM-SWT-MS041A-1204, 1238
518	DNS	12801.MS041.6-02301	REV. 1; QRL for Lube Oil Back-up Pump	1	SEM-SWT-MS041A-1204, 1238
520	DNS	12801.MS041.6-02303	REV. 1; QRL for Fuel Oil Drain Return Pump	1	SEM-SWT-MS041A-1204, 1238
522	M	12801.MS041.6-02305	REV. 2; AC Fuel Oil Return Pump Boiling Summary	1	SEM-SWT-MS041A-1212/1260/1288/1357
524	E	12801.MS041.6-02307	REV. 0; ASME III DC FO Booster Pump Motor Test Procedure	2	SEM-SWT-MS041A-1243
533	E	12801.MS041.6-02316	REV. 0; Motor Seismic Qualification Analysis for AC FO Transfer Pump P-0001*	1	SEM-SWT-MS041A-1367
534	E	12801.MS041.6-02317	REV. 0; Motor Seismic Qualification Analysis for AC Cooling Water Keep Warm Pump P-0010*	1	SEM-SWT-MS041A-1367
535	E	12801.MS041.6-02318	REV. 0; Motor Seismic Qualification Analysis for AC Keep Warm LO Pump 0006*	1	SEM-SWT-MS041A-1367
	E	12801.MS041.6-02320	REV.0, Motor Test Report for ASME III Section 3 Pumps- AC Cooling Water Keep-Warm Pump	2	SEM-SWT-MS041A-1500-R1
	E	12801.MS041.6-02321	REV.0, Motor Test Report for ASME III Section 3 Pumps- AC Lube Oil Keep-Warm Pump	2	SEM-SWT-MS041A-1500-R1
	M	12801.MS041.6-02322	REV. 0; VERTICAL FUEL OIL TRANSFER PUMPS ASME III SECTION 3 PUMPS ESTIMATED PERFORMANCE CURVE	1	SEM-SWT-MS041A-1509
	M	12801.MS041.6-02323	REV. 0; EMERGENCY DIESEL GENERATOR PUMPS ASME III SECTION 3 PUMPS PRESSURE TESTING OF COMPONENTS	1	SEM-SWT-MS041A-1509
588	M	12801.MS041.6-02347	Rev.0; ASME III Pumps P-0006A/B/C Hydraulic Performance Test Report	1	SEM-SWT-MS041A-1687
657	E	12801.MS041.6-12026	REV. 0; UNIT 1 - CHEMICAL POT FEEDER PUMP QUALITY RECORD LIST	1	SEM-SWT-MS041A-0758
	E	12801.MS041.8-02003	REV. 1; ASME III PUMP VERTICAL FUEL OIL TRANSFER PUMP MOTOR CONNECTION DIAGRAM	1	SEM-SWT-MS041A-0899, 1153
659	E	12801.MS041.8-02005	REV. 1; ASME III PUMP CW KEEP WARM PUMP MOTOR CONNECTION DIAGRAM	1	SEM-SWT-MS041A-0899, 1153

**QUALITY VERIFICATION DOCUMENTATION LIST**  
 Spec Title : EMERGENCY DIESEL GENERATORS

Seller: Weir Pumps Ltd. Spec. P/O. No. 8749011M041A0 Packing List No. \_\_\_\_\_

IDENTIFICATION AND DESCRIPTION OF EQUIPMENT		QUALITY PROGRAM DOCUMENTATION					BUYER'S REPRESENTATIVE		
BUYER IDENTIFICATION	EQUIPMENT DESCRIPTION	DESCRIPTION OF REQUIRED DOCUMENTS	REPORT SERIAL NO.	ATTACH NO.	CERT. BY SELLER	SIGN	DATE	SIGN	DATE
ITEM NO.	EQUIP. / TAG No.								
AB00200-013 014 015	IR21 - P - 0010A IR21 - P - 0010B IR21 - P - 0010C  KEEP WARM PUMP	<u>CERTIFICATE OF CONFORMANCE</u>  <u>DATA REPORTS</u> - Code Data Reports  <u>MATERIAL TEST PROPERTIES</u> - Certified Material Test Report, - Material Test Reports - Certificate of Compliance  <u>INSPECTION &amp; TEST REPORTS</u>  - Visual Examination Reports - Pump Test Reports - Motor Test Reports	Nat Board Nos 350, 351, 352, 356, 357 & 358.  116/4.2/110/1 to 183/1.  116/7.10/141/1 ,4 & 5.  116/4.5/129/1	Quality Verif Doc Section No  1.3  4.2  1.0  7.10  7.11  4.5					

**SELLER CERTIFICATION**  
 We certify that the listed required documentation meets the requirements of the Purchase Order and applicable specifications.  
 Seller :   
 Title : WPL Lead Engineer - Nuclear QA Date : June 2006  
**BUYER'S REP. ACCEPTANCE**  
 Buyer's Rep. Shall indicate acceptance. When inspection is not required at the shop, Buyer's review will be made at the job site after material or equipment has been shipped.  
 Accepted by : \_\_\_\_\_ Date : \_\_\_\_\_  
 Buyer's Rep & Title



**QUALITY VERIFICATION DOCUMENTATION LIST**  
 Spec Title : EMERGENCY DIESEL GENERATORS

Seller: Weir Pumps Ltd. Spec. P/O. No. 8749011M041A0 Packing List No. \_\_\_\_\_

IDENTIFICATION AND DESCRIPTION OF EQUIPMENT		QUALITY PROGRAM DOCUMENTATION				BUYER'S REPRESENTATIVE	
BUYER IDENTIFICATION	EQUIPMENT DESCRIPTION	DESCRIPTION OF REQUIRED DOCUMENTS	REPORT SERIAL NO.	ATTACH NO.	CERT. BY SELLER	SIGN	DATE
ITEM NO.	EQUIP. / TAG No.			Quality Verif Doc Section No	SIGN		DATE
AB00200-013 014 015	1R21 - P - 0010A 1R21 - P - 0010B 1R21 - P - 0010C  KEEP WARM PUMP	<b>INSPECTION &amp; TEST REPORTS</b> - Welding Material Test Reports - NDE Reports - Repair Weld Reports - Hydrostatic Test Reports - Heat Treatment Reports - Other Inspection and Test Reports Required by Spec or Quality Plan  <b>SDDR / NCR, IF ANY</b> <b>OTHERS ( If Any )</b>	116/4.3/0005/1 & 0008/1. 116/7.4/123/1 & 3 116/7.5/111/2, 3 & 7 N/A  114/7.8/110/2, 3 & 6. N/A  116/6.4/150/1, 4 & 5 116/7.9/110/1 & 111/3,4,5.  N/A N/A	4.3 7.4 7.5  7.8  6.4 7.9			

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 Accepted by : \_\_\_\_\_ Date : \_\_\_\_\_  
 Buyer's Rep & Title

1	14/01/05	NEG <i>[Signature]</i>	DEL <i>[Signature]</i>	NEG <i>[Signature]</i>	AS PER SHEET 2	GFE
0	14/12/04	NEG	DEL	NEG	FIRST ISSUE	GFR
Rev.	Date	Drafted by	Reviewed by	Approved by	Modification-Observation	Status

**TAIWAN POWER COMPANY**  
**LUNG MEN NUCLEAR UNITS 1 AND 2**  
**EMERGENCY DIESEL GENERATORS**  
**CONTRACT N°874 9011M041A0**

Title :  
**COOLING WATER KEEP-WARM PUMP-P0010**  
**QUALITY RECORD LIST**



**GE DRAWING NUMBER :**

**TAIPOWER DRAWING NUMBER:**

**12801.MS041. 6-02300**

THIS DOCUMENT CONTAINS  
 SAFETY RELATED ITEMS  
 YES  NO

THIS DOCUMENT CONTAINS  
 SEISMIC CATEGORY (Q) ITEMS  
 YES  NO

REVIEW LEVEL II

MAIN CONTRACTOR :



Saint - Nazaire - France



SIZE  
 A4

TECHNICAL COORDINATOR

**ALSTOM**  
 Levallois-Perret - France

**Power**  
 Electrical and Control Systems

SUB-SUPPLIER :

SCALE

1 /

CONTRACTOR INTERNAL DOCUMENT NUMBER

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FOLIO	END	Nb F°
1	3	3

THIS DOCUMENT IS CONTRACTOR'S PROPERTY AND CANNOT BE USED REPRODUCED  
 TRANSMITTED AND/OR DISCLOSED WITHOUT PRIOR WRITTEN

MICROFILM  
 TEST



**BUYER : Taiwan Power Company  
 Seller : SEMT Pielstick (ALSTOM Power)**

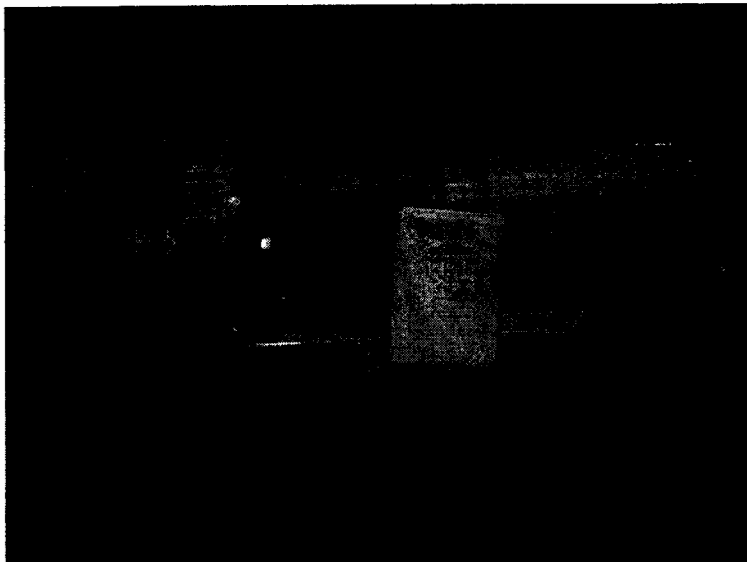
**QUALITY RECORD LIST**

**LUNG MEN NUCLEAR UNITS 1 & 2 – EMERGENCY DIESEL GENERATORS**

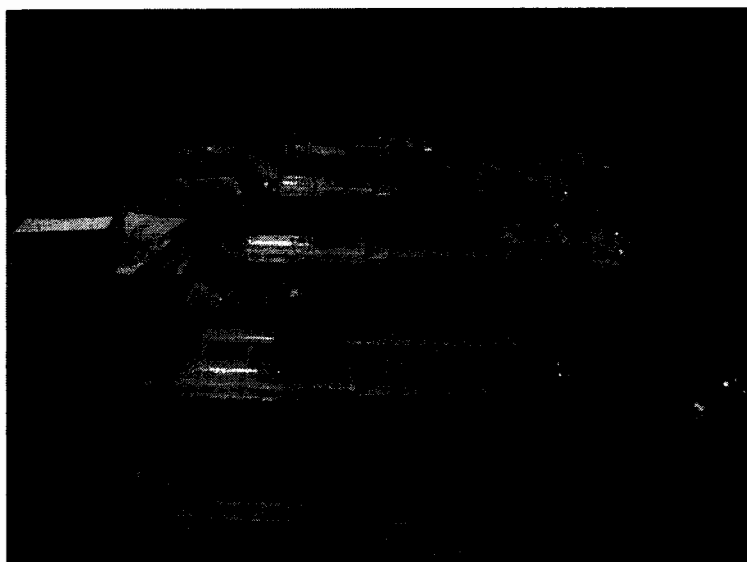
**Contract No : 8749011M041A0**

**Document Number : 12801.MS041.6-02300 Rev.1**

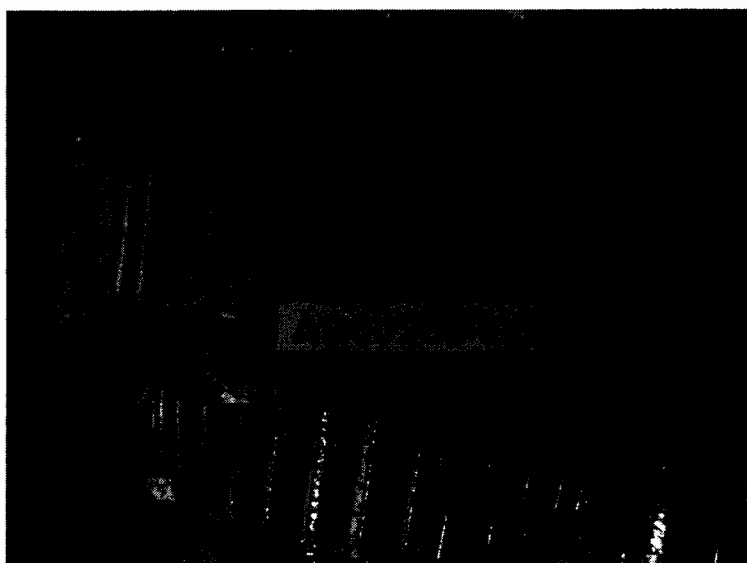
IDENTIFICATION AND DESCRIPTION OF EQUIPMENT		QUALITY PROGRAM DOCUMENTATION		CERTIFIED BY SELLER		BUYER'S REPRESENTATIVE	
BUYER IDENTIFICATION		DESCRIPTION OF REQUIRED DOCUMENTS		SIGNATURE	DATE	SIGNATURE	DATE
MARK	EQUIP. No/ TAG No	EQUIPMENT DESCRIPTION	DOCUMENT N°				
UNIT 1	1R21-P-0010 A/B/C	Cooling water keep warm pump	1 – Product Quality Certification (PQC) 2 – Manufacturing and Inspection Test Plan 3 – Certificate of Conformance 4 – ASME III Certification 5 – ASME III Design Report (Pressure Boundary) 6 – Components Support Report 7 – Pump Tests Report (including hydrostatic, function and performance test) 8 – Motor Tests Report 9 - NDE Report 10 - Certified material Tests Report 11 - Repair welds Report (if any) 12 - Certificate of compliance for painting 13 - Certificate of Compliance for Packing 14 - Non Conformance Report (if any) 15 – Operation, Installation, Maintenance Manual	Later 12801.MS041.4-08036  12801.MS041.6-02110  12801.MS041.6-02115			
UNIT 2	2R21-P-0010 A/B/C						
<b>SELLER CERTIFICATION</b>		<b>BUYER'S REP. ACCEPTANCE</b>					
We certify that the listed required documentation meets requirements of the Purchase Order and applicable specifications		Accepted by :		Buyer's REP.		Date :	
Seller		Title :		Buyer's REP.		Title :	
Date :		Date :					



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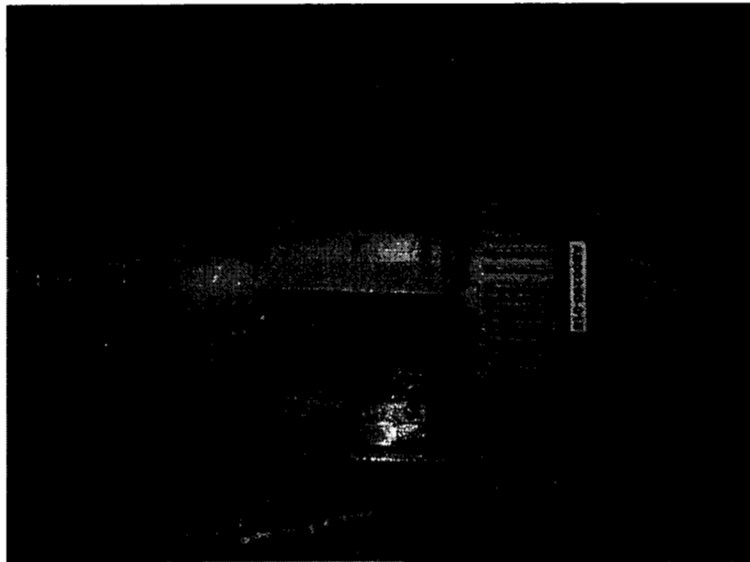
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