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## Installation Qualification (IQ) Test Pack

Title K610-PID-002-SS01-11  
Sub-Systems SS01 and SS11  
Inlet and Outlet Guillotine Valves


### *System Boundaries*

*SS01: Inlet guillotine valve including drive XNM01D10, sealing fan XNM01D11 (motor), all limit switches and ancillaries*

*SS11: Outlet guillotine valve including drive XNM01D20, sealing fan XNM01D21 (motor), all limit switches and ancillaries*


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## Revisions

Version	Date	Author	Comments
A	8 Sept 05	GR	Initial issue

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## Sign-Off Sheet

Name	Function	Name/Signature	Date
	Commissioning Engineer (Executer)		
	Commissioning Lead (Reviewer)		

## Client Review

Name	Function	Name/Signature	Date
	NEA Designee (Reviewer)		

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## P&ID VERIFICATION DATA SHEET

<b>Drawing No.</b>	K610-PID-002-SS01-11
<b>Title</b>	Stream Selection
<b>Date/Revision</b>	28-8-05/H
<b>Sub-system</b>	Sub-Systems SS01 and SS11 (Inlet and Outlet Guillotine Valves)

Review the installed Flue Gas Treatment System and compare it to the P&ID indicated above.

Check correct piping and duct layout and sizes, trace heating and insulation installed where required, equipment, valve and instrument types and locations are correct.

Check all valve, instrument and equipment tags are installed and correct.

**NOTE: If inconsistencies exist between any P&ID and the system, reline the P&ID and have the appropriate party (Keppel Seghers, sub-vendor or NEA) resolve the discrepancy (either by equipment/piping modification or P&ID modification).**

Attach a highlighted copy of the P&ID depicting the areas reviewed to the rear of this Test Pack. This P&ID will be redlined to depict any discrepancies between the P&ID and the as built conditions.

Design Element	Installed In Accordance With P&ID (Yes/No)?	Verified By/Date
Duct / piping layout and size		
Trace heating and insulation		
Equipment location and type		
Valve location and type		
Instrument location and type		
Equipment, valve and instrument tag numbers		


Comments: \_\_\_\_\_


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## ELECTRICAL DRAWING VERIFICATION

<b>Drawing No.</b>	
<b>Title</b>	
<b>Date/Revision</b>	
<b>Reference</b>	Verify the electrical installation of the valve motors XNM01D10/XNM01D20, along with sealing fan motors XNM01D11/XMN01D21 and all control/limit switches and ancillaries.

Conduct point to point and insulation checks for each circuit indicated on the Electrical Schematic Drawing from the final device back to the control/communication or switch panel termination and highlight the drawing to confirm, or attach any sub-vendor check sheets.

For each core / cable, rectify or note any discrepancies to the ident system.


For each termination check tightness of terminals / glands and rectify or note any discrepancies.

For each device check earth bonding and rectify or note any discrepancies

Attach a copy of the Electrical Schematic Drawing depicting the areas reviewed to the rear of this Test Pack. The Electrical Schematic Drawing will be redlined to depict any discrepancies between this and the as built conditions.

Design Element	Installed In Accordance With Drawing (Yes/No)?	Verified By/Date
Point to point checks correct		
Insulation checks acceptable		
Core / cable idents correct		
Terminations / glands correct		
Earth bonding correct		

Comments: \_\_\_\_\_  
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## SAFETY AND OPERABILITY DATA SHEET

<b>System</b>	K610-PID-002-SS01 and SS11
<b>Reference</b>	Inlet and Outlet Guillotine Valves
<b>Originator</b>	GR

Verify that all items of equipment within the system or sub-system have been installed in accordance with the criteria listed following:

Criteria	Installation Complies With Criteria (Yes/No)?	Verified By/Date
Confirm that there is no known apparent equipment configuration that could create a potential safety hazard. These include, but are not limited to, pinching hazards, sharp or jagged edges, tripping hazards, low clearance obstructions and electrical shock.		
Confirm that there are no configurations that obstruct access to safety or emergency equipment.		
Confirm that there is no known apparent equipment or piping configuration that would interfere with cleaning or normal operation of the equipment and cause cross contamination. This includes confirming that any items solely used for shipping or packing have been removed if they interfere with equipment operation.		
Confirm that proper guards are used for high temperature items or equipment that rotates or moves in a manner that would cause a safety hazard.		
Appropriate equipment and piping labels have been applied.		
Confirm that there is adequate room for maintenance and clearance for use.		

Comments: \_\_\_\_\_  
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## EQUIPMENT CHECKLIST DATA SHEET

<b>System</b>	K610-PID-002-SS01 and SS11
<b>Reference</b>	Inlet and Outlet Guillotine Valves
<b>Originator</b>	GR


Verify that all items of equipment within the system or sub-system have been installed in accordance with the criteria listed in the following Equipment Installation Checklist(s).

Verify that each component of the system or sub-system, including all major items of equipment have been installed according to the OEMs specifications.

**NOTE: This Equipment Checklist Data Sheet section is a collection of Equipment Installation Checklist(s).**

**Each Equipment Installation Checklist(s) may encompass a number of separate but similar items of equipment contained within the System or Sub-system. Signing the appropriate areas at the bottom of each sheet indicates that all of the associated Equipment Installation Check(s) have been completed on each item.**



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**Equipment Installation Checklist (Valve Indicators/Control/Limit Switches)**

<b>Equipment Description</b>	Inlet and Outlet Guillotine Valve Limit Switches
<b>Tag Number(s)</b>	XNM01S45 and XNM01S60 (GI local position indicators) XNM01S22/XNM01S26 and XNM01S23/XNM01S27 (GSL/GSH position switches) XNM01S20/XNM01S18 and XNM01S21/XNM01S19 (WSL, WSH torque)
<b>Manufacturer(s)</b>	
<b>Model Number</b>	
<b>Purchase Order Number</b>	
<b>Originator</b>	GR

Criteria	Installation Complies With Criteria (Yes/No)?	Method Of Verification	Verified By/Date
Equipment Installation, Operation and Maintenance (IOM) Manual located on site in the Equipment File.			
Equipment is clean and free of construction debris.			
Equipment has been installed properly and secured with no visual damage to any parts.			
All connections have been installed according to specifications and certified drawings.			
All transport / installation packing and / or cover plates have been removed.			
Commissioning Engineer to add specific additional checks as required after reference to Manufacturer's IOM manuals.			

Comments: \_\_\_\_\_

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### Equipment Installation Checklist (Inlet and Outlet Guillotine Valves)

<b>Equipment Description</b>	Inlet and Outlet Guillotine Valves
<b>Tag Number(s)</b>	XNM01D10 and XNM01D20 (7.5 kW Valve Motors)
<b>Manufacturer(s)</b>	
<b>Model Number</b>	
<b>Purchase Order Number</b>	
<b>Originator</b>	GR

Criteria	Installation Complies With Criteria (Yes/No)?	Method Of Verification	Verified By/Date
Equipment Installation, Operation and Maintenance (IOM) Manual located on site in the Equipment File.			
Equipment is clean and free of construction debris.			
Equipment has been installed properly and secured with no visual damage to any parts.			
All connections have been installed according to specifications and certified drawings.			
All transport / installation packing and / or cover plates have been removed.			
The following criteria are used when applicable:			
Alignment of equipment has been carried out to acceptable standard (note how) and provision for thermal expansion made where applicable.			
Any flexible elements are fitted with adequate provision for movement.			
Insulation is fitted with removable sections around valves or access ways, leaving adequate provision for alignment / tensioning of equipment.			
Where applicable oil systems and/or gearboxes filled with correct quality and quantity of oil.			
Where applicable moving items of equipment are adequately greased.			
Commissioning Engineer to add specific additional checks as required after reference to Manufacturer's IOM manuals.			

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Criteria	Installation Complies With Criteria (Yes/No)?	Method Of Verification	Verified By/Date

Comments: \_\_\_\_\_

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**Equipment Installation Checklist (Valve Sealing Air Fans)**

<b>Equipment Description</b>	Inlet and Outlet Guillotine Valve Sealing Air Fans
<b>Tag Number(s)</b>	XNM01D11 and XNM01D21 (Fan Motors)
<b>Manufacturer(s)</b>	
<b>Model Number</b>	
<b>Purchase Order Number</b>	
<b>Originator</b>	GR

Criteria	Installation Complies With Criteria (Yes/No)?	Method Of Verification	Verified By/Date
Equipment Installation, Operation and Maintenance (IOM) Manual located on site in the Equipment File.			
Equipment is clean and free of construction debris.			
Equipment has been installed properly and secured with no visual damage to any parts.			
All connections have been installed according to specifications and certified drawings.			
All transport / installation packing and / or cover plates have been removed.			
The following criteria are used when applicable:			
Any flexible elements are fitted with adequate provision for movement.			
Where applicable oil systems and/or gearboxes filled with correct quality and quantity of oil.			
Where applicable moving items of equipment are adequately greased.			
Commissioning Engineer to add specific additional checks as required after reference to Manufacturer's IOM manuals.			

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Criteria	Installation Complies With Criteria (Yes/No)?	Method Of Verification	Verified By/Date

Comments: \_\_\_\_\_

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**LIST OF ATTACHMENTS**

**NOTE:** List all included documents redlined drawing, test records etc below. If no attachments are included state none.