

Internal



Power Plant RoCa Steam Turbine Unit 3, ABB Steam Turbine works, 2022
Section E – Checklists

2021/03/17
Version 1

Section E Checklists

Content of Section E

- 1 Who provides What
- 2 Overhaul preparation meeting

1 Who provides What

Site facilities

Description	UNIPER	CON-TRACTOR	Comments
Office container		X	
Telecommunication for office container • Phone • Internet access		X	
Break and breakfast container	X		Joint use of the canteen. Canteen shop opens 8am to 2pm from Monday to Friday
Locker / sanitary facilities container	X		Central facilities within the plant
Locker / sanitary facilities container • Water / waste water connection • Electrical connection	X		
Sanitary facilities at site • Toilets • Hand washbasins	X		
CLIENT's workshop • Production of small parts • Use of machine tools	X		Very limited range possible after consultation with workshop foreman
CLIENT's tool store		X	not available
Racks for small parts (mind loading data!)	X		



Workbenches		X	Without / with bench vice
Sandblasting cabin for small parts, including abrasives / disposal	X		Very limited range possible after consultation with workshop foreman
Cleaning and washing box for small soiled components		X	
Loading operation of CONTRACTOR site equipment prior to commencement and after completion of inspection activities.	X		After consultation with workshop foreman

Occupational health and safety

Description	UNIPER	CONTRACTOR	Comments
Passed safety induction (Port Instruction) Uniper NL		X	
SCC or VCA (safety contractor certification)		X	
Covid 19 measures masks (hospital or FFP2)		X	
Covid 19 hand washing facilities	X		
Covid 19 quick test before access to work (weekly basis on Monday before)	X		
First aiders		X	
First aid equipment		X	
Emergency plan • List of emergency phone numbers	X		
Personal protective equipment, • long-sleeved protective clothing • protective boots S3 • hard hats • protective goggles • ear protectors • fall protection devices		X	Protective work equipment according to task assigned



Safety disconnection of components - De-commissioning - Safety disconnection - Commissioning	X		No self-reliant switching operations
Demand for barriers / fall protection scaffolding		X	
Supplying and erection of barriers / fall protection scaffolding	X		UNIPER's scaffolding contractor has to be requested
Covers -accessible- for parting joint levels of the turbine	X		UNIPER's scaffolding contractor has to be requested

Supply and disposal services / consumables

Description	UNIPER	CONTRACTOR	Comments
Plant service water (not drinkable)	X		For cleaning activities
Plant compressed-air (ca. 5 - 7 bar)	X		Only for smaller pneumatic tools
Electricity (plug in units) inside the machine hall on turbine level 50Hz / 400V / 63A	X		Current distributor from the CONTRACTOR
Standard cleaning agents and lubricants, including working instructions for hazardous substances		X	Agreement of the plant on use and storage is mandatory – related to the ISO 14001
Consumables - cleaning cloth (lint-free) - protective sheet, adhesive tape (striking colours) - abrasives / grinding and cutting materials		X	
Technical gases	X		CONTRACTOR shall request the support early
Media (e.g. Oil, Grease) fillings for operation	X		



Disposal/recycling of - residual waste - paper / cardboard - wood - metal - cabling scrap - sealing material - insulation	X		CONTRACTOR is responsible for transport to collection point Waste separation is required!
Disposal / recycling - hazardous materials packages with remainders - empty hazardous materials packages		X	
Disposal of Hexavalent Chromium (Cr6) In case of possible Cr6 finding the CONTRACTOR has the obligation to approve the existence of Cr6 (e.g. M3 wipe test) and dispose (method statement of disposal to be provided with the offer) into a secure containment. The final disposal of the Cr6 containment will be performed by the CUSTOMER		X	

Commented [HH1]: What is the RoCa standard?

Tools

Description	UNIPER	CONTRACTOR	Comments
Standard tools for turbine overhaul in lockable tools container		X	Tools in accordance with the scope of the technical specification
Plant-specific special tools - auxiliary bearings - transport safeguards (colour-marked) - guide rods		X	CONTRACTOR is responsible for checking auxiliary tools for completeness and usability
HP-Turbine "Inner Block" specific tools for heating and transport of the shrink rings in case of workshop "off site works"		X	

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IP-Turbine Rotor and casing parts specific tools for securing and transport in case of workshop "off site works"		X	
HP and IP Turbine inner block high torque tools for joint flange bolts in case of workshop "off site works"		X	
Tools for coupling bolts		X	High Torque Tool (ITH)
Tools for joint flange bolts		X	High Torque Tool (ITH)
Tools for foundation bolts		X	High Torque Tool (ITH)
Industry-type vacuum cleaner		X	



Transport of components (lifting, hoisting, shipment)

Description	UNIPER	CONTRACTOR	Comments
Material, spares and component shipment (e.g. unloading, uploading, craning) on site between warehouse, workshop and turbine hall		X	Contractor's personnel to be instructed by UNIPER in using the cranes
Turbine hall crane (s) operation by skilled personnel with crane permit		X	Use of the turbine hall crane is not solely for CONTRACTOR and needs to be synchronised with other works during outage time. The CONTRACTOR is obliged to be able and with according documented qualification to operate the turbine hall crane in every shift.
Material, spares and component shipment (e.g. unloading, uploading, craning) off site between plant and workshop		X	
Transport packaging / preservation inside and outside the site		X	
HP Turbine inner block (inner casing and rotor) transport chassis qualified for truck transport outside of the station (public space) The possible transportation company needs to be named, including a reference list, with the offer		X	
IP Turbine Casings and Rotor transport chassis qualified for truck transport outside of the station (public space) The possible transportation company needs to be named, including a reference list, with the offer		X	



Fork lift truck	X		Contractor's personnel to be instructed by UNIPER in using the lift truck. Not solely for CON-TRACTOR – use of fork lift truck needs to be aligned
Driving licence for fork lift trucks		X	Mandatory for CON-TRACTOR's personnel
Pallet truck to carry single pallets by hand		X	
Lifting beams for turbine rotors and casings / bodies	X		Checked and loading data clearly marked
Steel cable / rope for lifting of turbine components		X	Checked and loading data clearly marked
Supports for turbine rotors and casings / bodies		X	Checked and loading data clearly marked
Supporting blocks of wood		X	
Short steel cables, shackles etc. for material transport		X	Checked and loading data clearly marked
Pallets		X	
Material boxes for small parts		X	

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Materials for provision of works (on site lathe, shaft dummy studs, benches, turning)

Description	UNIPER	CONTRACTOR	Comments
All Materials and tools for off- and/or onsite works including but not limited to: • Lathe for on site worksd (if applicable) • HP- IP rotor shaft Dummies for turning and/or balancing • Transportation and/or turning rack		X	RoCa does not have any racks and/or shaft dummies



2 Overhaul preparation meeting

Content	UNIPER	CONTRACTOR	Comments
UNIPER contact persons, - Maintenance Engineer Turbine, and I&C equipment - Maintenance Manager - Senior Engineer(s) (AM / UTG)	X		Nomination of acting persons
Contractor contact persons, - Site Manager - Project Manager		X	Nomination of acting persons
Health, Safety & Environment on site - Covid 19 measures - Plant organisation in practise - Work coordination / Coordinator - Work responsibility	X		UNIPER explains the site specific organisation and requirements
Work permit act on site	X		UNIPER explains the work permit procedure
Health, Safety & Environment of the CONTRACTOR - Covid 19 measures - Site organisation in practise - Work coordination - Work responsibility - Transfer of the risk assessment for each job		X	The CONTRACTOR explains his scope of work specific HSE measures on site
Detailed schedule for the scope of service, - Assembling time span scaffolding, insulation and I&C equipment - Overhaul work time span on site / off site - Milestones component fact finding and check activities - Transport time span and interfaces - Specified activities on the turbo set like operating weight, oil system operable ASO - Turbine hall crane occupancy (if necessary)		X	The CONTRACTOR explains the scope of service based on the time-line. UNIPER checks the interfaces on his side



Content	UNIPER	CONTRACTOR	Comments
Inspection and Test Plan (ITP) for the scope of service, • Checks and tests of parts (xT) • Work records (P) • CLIENT witness points (W) • CLIENT hold points (H) • Qualification and Reference of Transportation Sub-CONTRACTOR • Transportation Schedule		X	The CONTRACTOR explains the scope of service based on the ITP. UNIPER checks the interfaces on his side
Turbo-set -specific auxiliary tools check, • Check for completeness • List of deviations		X	Has a deviation report and proposal for tools/tests been submitted?
Turbo- set I&C equipment list, • Scope of disassembling / reassembling work for measurements and cables • Target dates		X	
Scaffolding list, • List of needed scaffolds works due to the scope • Deviations of load and design • Target dates		X	
Insulation list, • List of needed insulation works due to the scope • Target dates		X	
Site organisation of the Turbine hall, • Turbine hall space arrangement (size and loading data needed!) • Storage and assembly areas • Secured work area • Office container areas	X	X	Alignment between the UNIPER and CONTRACTOR to optimize the work-flow within the turbine hall



Content	UNIPER	CONTRACTOR	Comments
Site organisation in general, Number of staff as basis for sizing of staff accommodation (Contractor's and subcontractor employees)		X	
Chromium 6 Handling	X	X	CONTRACTOR shall inform UNIPER, CONTRACTOR shall test and clean. UNIPER to dispose
Discussion of checklists, Who provides what	X		The checklists forms are part of the agreed scope
Fact finding follow-up matrix - Presentation of the follow up matrix - Alignment of the handling process	X		UNIPER explains the fact finding follow-up matrix template