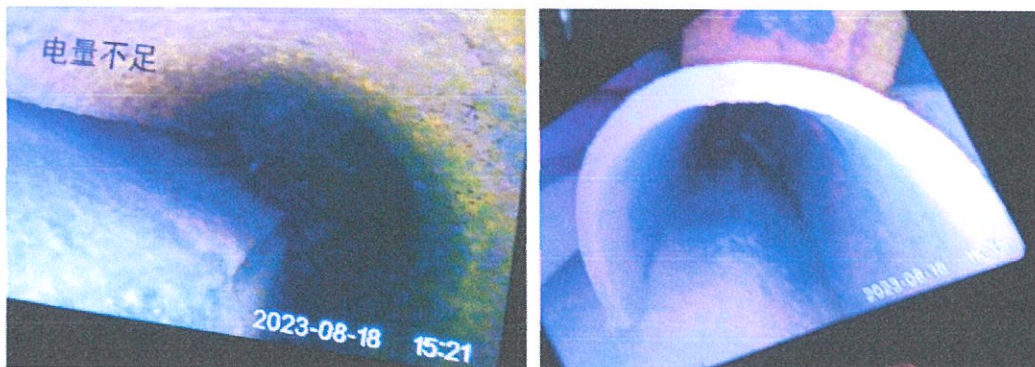


Scope Of Work Upgrade air extraction Condenser U2

一、工程概况 Project overview

苏姆赛电厂 2 号机组凝汽器因基建安装问题导致真空抽气管路与空冷区挡汽板未开孔，开孔处在挡汽板上部（南北两侧各 4 处，共 8 处），且端管板处抽气小联箱未按照设计要求与端管板进行封焊，真空泵抽主凝结区上部蒸汽，不能有效的抽空冷区空气和不凝结气体，造成 2 号机组抽真空效率低。针对此问题研究决定利用检修期进行检查挖孔和补焊处理。

The condenser of Unit 2 of Sumsel Power Plant has no opening holes due to infrastructure installation problems, and the opening holes are in the upper part of the steam baffle in the vacuum extraction pipe and the air cooling zone (8 in total), and the small header at the end tube plate is not sealed and welded with the end tube plate according to the design requirements, and the vacuum pump pumps the steam in the upper part of the main condensation zone. It can not effectively evacuate the cold zone air and non-condensable gas, resulting in low vacuum efficiency of unit 2. In view of this problem, it is decided to use the maintenance period to check holes and repair welding treatment.



抽空气区内窥镜检查

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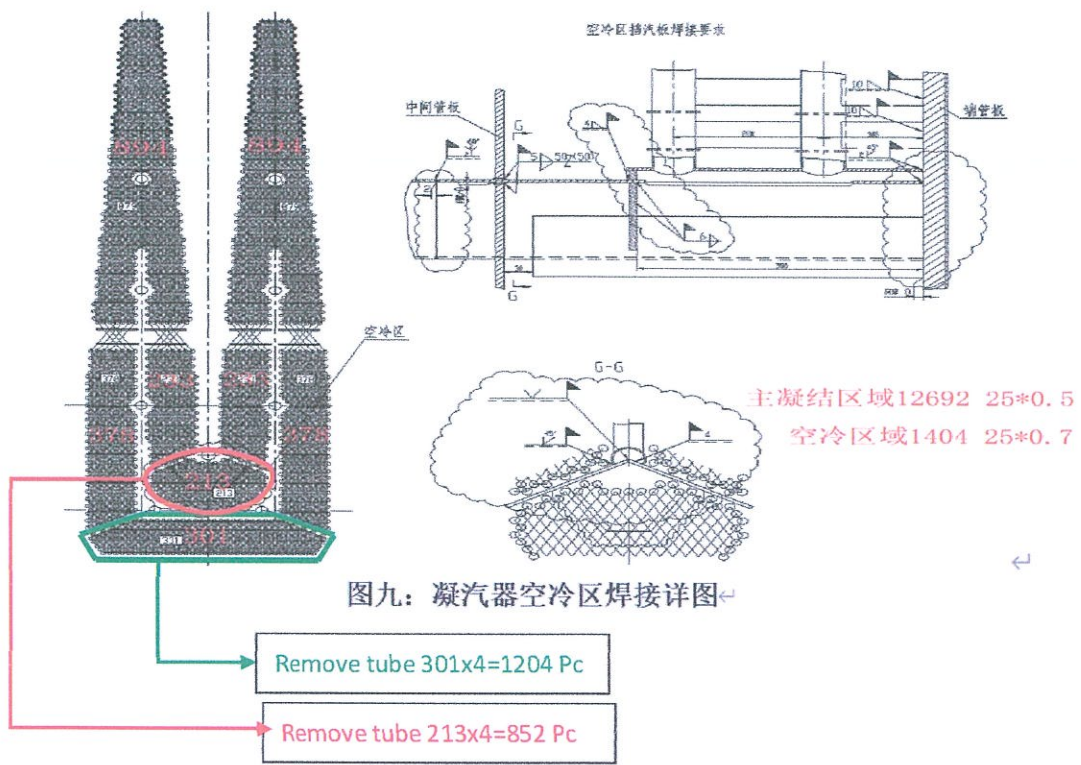
Evacuated area endoscopy

二、检修方案: Maintenance plan

因内部空间狭小，人员无法进行焊接，所以需要拆除凝汽器管束，经过从上部和从下部拆除管束对比分析，认为从下部抽取管束较为合理，且便于施工。经过计算需要在抽气管正下部拆除管束共 $(213+301) * 4 = 2056$ 根。其中空冷区拆除 $213 * 4 = 852$ 根，规格 $\Phi 25 * 0.7$ 。主凝结区拆除 $301 * 4 = 1204$ 根，规格 $\Phi 25 * 0.5$ 。

另外鉴于凝汽器以往泄漏封堵的管子，在本次检修中一并进行更换，建议规格 $\Phi 25 * 0.7$ ，增加 100 根，以备不时之需。共 2156 根。

*Due to the narrow internal space, the personnel can not weld, so the condenser tube bundle needs to be removed, through the comparative analysis of removing the tube bundle from the upper part and from the lower part, it is considered that the tube bundle from the lower part is more reasonable and convenient for construction. It is calculated that a total of $(213+301) * 4 = 2056$ tube bundles need to be removed at the right lower part of the suction pipe. Among them, $213 * 4 = 852$ are removed from the air cooling area, and the specification is $\Phi 25 * 0.7$. Removal of $301 * 4 = 1204$ roots in the main condensation area, specifications $\Phi 25 * 0.5$. In addition, in view of the previous leakage and sealing pipe of the condenser, it is recommended to replace the pipe in this overhaul, and the specification is $\Phi 25 * 0.7$, adding 100 pipes for emergency needs. A total of 2156.*



MATERIALS			
No	Work Description	Scope of Work	Remarks
1	Spare Part Requirement	Tube Ø25x0,7	*
		Gasket	*
		Epoxy	*
		Liquid rubber	*
		rubber plate	*

Common Scope			
No	Work Description	Scope of Work	Remarks
1	General Scope	Cleaning working area after finish	✓
		First aid	✓
		Medical for worker	✓
		Fire fighting equipment	*
		Safety Inspector facilities	*
		General Lighting	*
		Portable Lighting	✓
		Over all security	*
		2	Temporary Facility Scope
Meals & water drinking	✓		
Mob and de-mob manpower	✓		
Mob and de-mob tool and equipment	✓		
Local transportation for manpower, material, equipment	✓		
Safety PPE	✓		
Site offices & rest shelter	✓		
Scaffold installation and dismantle	*		
Secure site - Safety Inspector facilities	*		
3	Consumables & Tool Scope	Consumable (wag cotton, insulation tape, welding electrode, oxygen, accetylene.)	✓
		Compressed air sources	*
		Water resources	*
		Electrical resources	*
		General tool & Special work tools	✓
		Special tools such as tube expander, orbital welding machine, special cutting machine	
4	Other	Operator overhead crane class 2 (crane cap 75 T)	✓
		Quality Control	✓
		Certified welder	✓
5	Safety requirement	Vendor must be have safety man & have certificate	✓
		JSA must be completed before start working	✓
		The Manpower must be have certificate of health form	✓
		The Vendor must be submit check list for outsourcing service work	✓
		The Vendor must be have list Tools & APD	✓
		Form will be share after PO.	
		Form will be share after PO.	
		Tools & APD will be check before use	
	REMARKS	✓ Vendor Scope	* Not Vendor Scope

Other :

This job include cleaning water chamber & steam chamber of condenser.

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