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**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

DL/T 1115-2019

**Directive of chemistry check-up for unit maintenance in fossil
plant**

火力发电厂机组大修化学检查导则
(English Translation)

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Foreword

This standard is based on the rules set out in GB/T 1.1-2009 "The Structure and Compilation of Standardization Guidelines Part One" set.

This standard is a revision of DL/T 1115-2009 "Guidelines for Chemical Inspection of Thermal Power Plant Unit Overhaul", which is in line with DL/T 1115-2009 in comparison, the main differences in technical content are.

--- Added normative reference documents.

--Modified the general rules.

--Modified the inspection content and method of boiler equipment.

--Added the inspection content and method of the combined cycle unit waste heat boiler.

--Modified the inspection content and method of steam turbine.

--Increase the inspection content and method of direct air condenser.

--Increase the inspection content and method of the indirect air-cooled circulating water system.

--Added the inspection contents and methods of other equipment.

-Part of the contents of Appendix A, Appendix B, Appendix C, Appendix E and Appendix F have been revised.

Appendix A and Appendix B of this standard are informative appendices, and Appendix C, Appendix D, Appendix E, Appendix F, and Appendix G are normative appendix.

This standard was proposed by the China Electricity Council.

This standard is under the jurisdiction and interpretation of the Power Plant Chemical Standardization Technical Committee.

Drafting organizations of this standard. Xi'an Thermal Power Research Institute Co., Ltd., China Power Huachuang Power Technology Research Co., Ltd., Huadian Electric Power Division Research Institute Co., Ltd., Ningxia Power Energy Technology Co., Ltd., Beijing Energy Group Co., Ltd.

1 Scope

This standard specifies the content, methods and evaluation criteria of the chemical inspection for the overhaul of thermal power plant units.

This standard is applicable to the chemical inspection of the equipment during the overhaul (ie Class A overhaul) of thermal power plant units. Other levels for maintenance, refer to the implementation.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version is suitable Used in this document. For undated references, the latest version (including all amendments) applies to this document.

GB 26164.1 Electrical Safety Work Regulations Part 1: Heat and Machinery DL/T 794 Guidelines for chemical cleaning of boilers in thermal power plants DL/T 1151 Analysis method of scale and corrosion products in thermal power plants

3 General

3.1

The purpose of chemical inspection is to grasp the corrosion, scaling or salt accumulation of power generation equipment, establish equipment status files; evaluate the unit Whether the feed water and boiler water treatment methods adopted during operation are reasonable, and whether the monitoring is effective; evaluate the unit in infrastructure and shutdown (standby) Whether the anti-corrosion method adopted during use is appropriate; analyze the problems found in the inspection or the problems that may be expected to occur, Put forward improvement measures and suggestions.

3.2

Before the unit is overhauled, the chemistry major should formulate a detailed inspection plan and put forward chemical-related inspection items and requirements. machine During the inspection and repair of the team, the production management department and relevant personnel in the steam turbine, boiler, and electrical fields should cooperate with each other in accordance with the chemical inspection items.

Learn professionally for inspection.

3.3

When overhauling the units A and B, the heating surface of the boiler, such as the economizer, water wall, superheater and reheater, should be inspected by pipe cutting;

During the last level C overhaul before the level A overhaul, the heating surface of the boiler should be cut and inspected. Other levels of maintenance can be rooted According to the actual situation, determine whether to cut the pipe for inspection.

3.4

Steam turbines and boilers shall cut or draw pipes according to the specific requirements of chemical inspections, and chemical personnel shall conduct related inspections and analyses.

After opening important equipment such as steam drums, steam turbines, and condensers, chemical inspections should be performed first, and then overhaul. After the overhaul Inform relevant personnel of chemistry major to participate in inspection and acceptance in time.

3.5

Chemical inspectors should be familiar with and implement the safety regulations of GB 26164.1.

3.6

After the overhaul, the chemistry major shall conduct a comprehensive analysis of the corrosion, scaling or salt accumulation of thermal equipment, aiming at the existing Put forward rectification measures and suggestions for improvement, and organize the compilation of chemical inspection reports for unit maintenance. See Appendix A for its main content.

3.7

The scale samples or tube samples of the main equipment should be kept dry, and the scale samples should be kept for no less than one overhaul period. When the boiler tube samples are stored the interval between not less than two chemical cleanings. The chemical inspection technical files for the overhaul of the unit should be kept for a long time.

4.1 Develop inspection plan

In accordance with the provisions of this standard, chemistry majors have formulated this chemical inspection plan based on unit operating status and previous overhaul inspections.

Plan and included in the unit maintenance plan.

4.2 Inspection preparation

Before the unit is overhauled, preparations such as sampling of relevant equipment, on-site photos and inspection records should be done. Check the record sheet see Appendix B.

4.3 Statistics related indicators

After the unit is out of service, analysis and statistics of relevant information during the two major repairs should be done. The main contents are.

- a) The qualification rate of water vapor quality, various abnormal indicators and their exceeding range and duration; those with three-level processing values Situation etc.
- b) Leakage of condenser and other heat exchanger tubes.
- c) Water vapor loss rate and pollution discharge rate.
- d) Relevant operating parameters reflecting the scaling of thermal equipment, such as boiler pressure difference, condenser end difference and coal consumption.
- e) The operating time, stop (standby) time, number of start and stop, maintenance methods and effects of the unit during the two major repairs.
- f) Indicators such as steam turbine oil quality analysis and refueling quantity.
- g) The purity of hydrogen and the amount of hydrogen supplement.