



Hengyi Industries Sdn Bhd
恒逸实业（文莱）有限公司

HYBN-T9-11-0031-2020-1

**No.2 Refinery Dept. Utilities
Management Rules**

炼油二部公用工程管理细则

Issued Date: May 2020

颁布日期: 2020 年 5 月

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Preface 前言

This rule is written based on "HYBN-T3-06-0004-2018-1 Production & Operation Management System".

本细则依据《HYBN-T3-06-0004-2018-1 生产运行管理制度》制定。

This rule is effective as of May 21, 2020.

本细则从 2020 年 5 月 21 日起实施。

This rule is first published on of May 21, 2020, at the same time abolished “《HYBN-T9-11-0014-2018-1 Water Management Rules》”. 本细则于 2020 年 5 月 21 日首次发布，同时废除《HYBN-T9-11-0014-2018-1 水务管理细则》。

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1 Purpose 目的

These rules are formulated in order to ensure the safe operation of production devices (or systems) and strengthen the control and management of the department's utility system.

为确保生产装置（或系统）安全运行，加强部门内部公用工程系统控制和管理，特制定本细则。

2 Scope of application 适用范围

2.1 These rules specify the scope, responsibilities, management content and requirements of No.2 Refinery Dept. Utility System.

本细则规定了炼油二部公用工程介质（系统）管理的范围、职责、管理内容及要求。

2.2 These rules are applicable to the management of the water system, air and nitrogen system, steam system, fuel gas system, air vent system and hydrogen system of No.2 Refinery Department.

本细则适用于炼油二部水务系统、风氮系统、蒸汽系统、燃料气系统、放空气系统及氢气系统的管理。

3 Management responsibilities 管理职责

由工艺专业负责本细则的修订、监督检查，班组负责本细则的执行落实。

The process discipline are responsible for the revision, supervision and inspection of these rules, and the team is responsible for the implementation of these rules.

4 Management content and requirements 管理内容及要求

4.1 Water management content and requirements 水务管理内容及要求

4.1.1 Circulating water management 循环水管理

4.1.1.1 Each unit shall not use circulating water as flushing water or discharge it arbitrarily, and shall not discharge non-circulating water sources into the circulating water system.

各装置不得将循环水用作冲洗水或随意排放，不得将非循环水源排入循环水系统。

4.1.1.2 In principle, under the premise that the circulating water flow rate in the cooler tube bundle at the site of each unit is $\geq 1\text{ m/s}$, the temperature difference between the inlet and outlet of the circulating water shall be controlled at $\geq 8\text{ }^\circ\text{C}$, and the shift team shall timely adjust the circulating water consumption according to the operating conditions of the unit.

原则上在各装置现场冷却器管束内循环水流速 $\geq 1\text{m/s}$ 的前提下, 控制循环水进、出口温差 $\geq 8^\circ\text{C}$, 班组需根据装置运行工况及时对循环水用量进行调整。

4.1.1.3 The on-duty shift team shall check the temperature and pressure of the circulating water cooler inlet and outlet according to the inspection requirements, and check the circulating water quality according to the requirements of 《Monthly Fixed Work Arrangement of the Unit》 and make inspection records.

当班班组需按巡检要求对循环水冷却器进、出循环水温度和压力进行检查, 并依据固定工作的要求检查循环水水质, 并做好检查记录。

4.1.1.4 Before putting the circulating water cooler into operation, the quality of the circulating water at the outlet of the cooler must be checked. The cooler can only be incorporated into the circulating water system after the outlet of the circulating water has no obvious debris and the water quality is clear. This is to prevent impact on the water quality of the circulating water system.

各装置投用循环水冷却器前, 必须对冷却器出口循环水水质进行检查, 循环水出口经观察没有明显杂物、水质清澈后才能将冷却器并入循环水系统, 防止对循环水系统水质造成冲击。

4.1.1.5 The main inlet and outlet valves of circulating water of each unit shall not be adjusted without authorization. If adjustment is required, the professional management personnel shall be consulted.

各装置循环水进、出总阀不得擅自调节, 如需调节须请示专业管理人员。

4.1.1.6 When the circulating water quality is abnormal, the unit process engineer shall be responsible for organizing the team members to conduct troubleshooting.

4.1.1.6 当循环水水质出现异常, 装置工艺技术人员负责组织班组人员进行问题排查处理。

4.1.2 Boiler water management 锅炉水管理

4.1.2.1 The diesel hydrogenation unit shall monitor the deaeration water quality once a week. If the analysis result is unqualified, it shall be reported to the unit's technical personnel and the on-duty dispatcher in time.

柴油加氢装置需对除氧水水质进行监测, 分析频次为每周一次, 若分析结果不合格, 应及时汇报装置技术人员和值班调度。

4.1.2.2 1030-D501 boiler water control items include alkalinity, phosphate ion, and analysis frequency is 3 times per week.

1030-D501 炉水控制的项目包括碱度、磷酸根离子, 分析频次每周 3 次。

4.1.2.3 1030-D501 regular blowdown once per shift for 1min. Keep continuous blowdown

open.

1030-D501 定期排污每班一次，每次 1min。连续排污保持常开。

4.1.3 Chemical water management 化学水管理

4.1.3.1 In principle, demineralized water is used in the air-cooling spray system. Each unit shall change water at least once a month in accordance to the water quality. If the water quality analysis and inspection items are unqualified, replacement must be carried out. If necessary, samples shall be added. The demineralized water shall meet the following analysis index.

空冷喷淋系统原则上均使用除盐水，各装置根据水质情况每月换水不少于一次，水质分析检验项目不合格，必须进行置换，必要时加样，除盐水应满足以下分析指标。

Demineralized water quality index 除盐水质量要求

Cl- mg/L	PH value 值 (25℃)	Total hardness (calculated by CaCO ₃) 总硬度 (以 CaCO ₃ 计) mmol/L	Iron ion 铁离子 μg/L	Conductivity 电导率 μs/cm	Soluble silicon dioxide 可溶性二氧化硅 μg/L
≤25	6.5-7.5	≈0	≤30	≤0.2	≤20

4.1.3.2 The delivery temperature of steam condensate of each unit shall generally not be more than 100 °C, and the quality of condensate shall be analyzed and checked every month.

各装置蒸汽凝结水外送温度一般要求不大于 100℃，每月对凝结水水质进行分析检查。

4.1.4 Unit's water usage management 装置用水管理

4.1.4.1 Water consumption for technical measures, new installations in the unit and other water projects shall be reported to the on-duty dispatcher.

技措用水、新建装置用水及其他用水项目的用水需汇报值班调度。

4.1.4.2 In order to prevent water of different quality from channeling to each other, it is strictly prohibited to connect water pipelines with different media properties. If necessary, it must be approved by the company's competent leader and take measures to prevent media from channeling to each other.

为防止不同品质的水互窜，严禁介质属性不同的水管线相互连接，如确实需要，须经公司主管领导批准并做好防介质互窜措施。

4.1.5 Water saving management 节水管理

4.1.5.1 Each unit is strictly prohibited from running, emitting, dripping and leaking of water.

各装置必须严格杜绝各种用水的跑、冒、滴、漏现象。

4.1.5.2 It is forbidden to dilute sewage with fresh water to avoid direct discharge of cooling water.

严禁用新鲜水稀释污水，避免冷却水直排。

4.2 Air and nitrogen system management content and requirements 风氮系统管理内容及要求

4.2.1 The plant air of each unit shall not be used at will. If it is needed to be used temporarily, it shall be reported to the on-duty dispatcher for instructions, and can only be used after obtaining his consent. At the same time, the horizontal contact and contact record shall be made with the air separation unit.

各装置工厂风不得随意使用，需临时使用时，应向值班调度请示汇报，经值班调度同意后方可使用，同时与空分装置做好横向联系和联系记录。

4.2.2 In principle, the hand valve of instrument air service station of each unit shall be sealed and strictly forbidden to be used. If it needs to be used, on-duty team leader shall ask for instructions and report to the unit process engineer and on-duty dispatcher. It can be used only after obtaining their consent. At the same time, the horizontal contact and contact record shall be made with the air separation device.

各装置仪表风服务站手阀应打好铅封原则上严禁使用，如需使用由当班班长请示汇报装置工艺技术人员和值班调度，取得装置工艺技术人员和值班调度同意后方可使用，同时与空分装置做好横向联系和联系记录。

4.2.3. The on-duty shift team of each unit shall cut off the instrument air tank and make records (once per shift) according to the inspection requirements.

各装置当班班组需按照巡检要求对仪表风罐进行切液并做好记录（每班一次）。

4.2.4 Nitrogen in each unit shall not be used at will. If it needs to be used temporarily, on-duty team leader shall ask for instructions and report to the process engineer and the on-duty dispatcher of the unit. It can be used only after obtaining their consent. At the same time, the horizontal contact and contact record shall be made with the air separation unit.

各装置氮气不得随意使用，需临时使用时，由当班班长请示汇报装置工艺技术人员和值班调度，取得装置工艺技术人员和值班调度同意后方可使用，同时与空分装置做好横向联系和联系记录。

4.2.5 The nitrogen use points of each unit shall be managed properly to prevent the media from channeling each other. If it needs to be used, on-duty team leader shall ask for instructions and report to the process engineer and on-duty dispatcher of the unit, and it

can be used only after obtaining their consent. At the same time, the horizontal contact and contact record shall be made with the air separation unit. After use, it should be ensured that the condition meets the management requirements for preventing media from channeling.

各装置氮气使用点做好日常防介质互窜的管理工作,如需使用由当班班长请示汇报装置工艺技术人员和值班调度,取得同意后方可使用,同时与空分装置做好横向联系和联系记录。使用完毕后,应确保状态符合防介质互窜管理要求。

4.2.6 Each unit shall save air nitrogen while ensuring safe production, and strictly prevent the leakage of air nitrogen.

各装置应在保证安全生产的情况下做好节约用风用氮,严格杜绝各种用风用氮的跑、漏现象。

4.3 Steam management content and requirement 蒸汽管理内容及要求

4.3.1 When the temporary steam consumption exceeds 2t/ h, it shall be reported to the process engineer and on-duty dispatchers.

当临时用汽量超过 2t/h 时,应向装置工艺技术人员和值班调度汇报。

4.3.2 The steam use points of each unit shall be managed properly daily to prevent the media from channeling each other. After use, it should be ensured that the condition meets the management requirements for preventing media from channeling.

各装置蒸汽使用点做好日常防介质互窜的管理工作,使用完毕后,应确保状态符合防介质互窜管理要求。

4.3.3 Before putting the steam into operation, all devices shall be well drained, stored and warmed. When steam is used, it is necessary to do inspection and maintenance work in accordance with inspection requirements. In case of water hammer, it shall be handled in time to prevent damage to the pipeline and equipment.

各装置投用蒸汽前应做好排存水和暖管工作,蒸汽使用过程中需按照巡检要求做好检查维护工作,出现水击现象应及时处理,防止对管线、设备造成损坏。

4.3.4 The on-duty shift team shall monitor relevant parameters of steam generation and consumption equipment, and report to the process engineer and on-duty dispatcher in case of abnormalities.

当班班组应做好发汽、用汽设备相关参数的监控,蒸汽产耗出现异常时应及时汇报工艺技术人员和值班调度。

4.3.5 Each unit shall save steam while ensuring safe production, and strictly prevent all types of steam from running, emitting, dripping and leaking.

各装置应在保证安全生产的情况下做好节约用汽，严格杜绝各种蒸汽的跑、冒、滴、漏现象。

4.4 Fuel gas management content and requirements 燃料气管理内容及要求

4.4.1 Before putting fuel gas into operation, all devices shall be purged and replaced. After replacement, the quality inspection department shall be contacted for analysis and qualification (oxygen content $\leq 0.5\%$ v/v) before being put into used.

各装置投用燃料气前应做好吹扫、置换工作，置换完成后需联系质检部分分析合格（氧气含量 $\leq 0.5\%$ v/v）后方可投用。

4.4.2 The on-duty shift team shall monitor relevant parameters of fuel gas and gas equipment, and report to process engineer and on-duty dispatcher in case of any abnormalities.

当班班组应做好燃料气及用气设备相关参数的监控，出现异常时应及时汇报工艺技术人员和值班调度。

4.4.3. When the pilot light of heating furnace of each unit is not put into use, its corresponding metal hose of main burner shall be disconnected from the flange at the connection of nozzle and flange protection shall be done. The main burner of the supporting pilot light that is in burning state is not needed to disconnect if it is not put into use.

各装置加热炉长明灯线未投用时，应将该长明灯及其对应主火嘴的金属软管，与火嘴连接处法兰断开并做好法兰保护。配套长明灯处于燃烧状态的主火嘴，若未投用可不作断开处理。

4.4.4 The on-duty shift team shall cut off the fuel gas tank according to the inspection requirements and make records (once per shift).

当班班组需按照巡检要求对燃料气罐进行切液并做好记录（每班一次）。

4.4.5 During normal operation of fuel gas, the tracing of fuel gas system pipeline shall be in normal operation state.

各装置在燃料气正常投用期间，应保证燃料气系统管线伴热处于正常投用状态。

4.4.6 Each unit shall save gas while ensuring safety production, and strictly prevent all types of fuel gas from running, emitting, dripping and leaking.

各装置应在保证安全生产的情况下做好节约用气，严格杜绝各种燃料气的跑、冒、滴、漏现象。

4.5 Air vent management content and requirements 放空气系统管理内容及要求

4.5.1 The on-duty shift team shall monitor the parameters related to the air vent system. In case of any abnormalities, the team leader shall immediately organize the team members to inspect, and report to the process engineer and the on-duty dispatcher.

当班班组应做好放空气系统相关参数的监控，出现异常时班长应立即组织班组人员进行检查，同时汇报工艺技术人员和值班调度。

4.5.2 The on-duty shift team shall check the liquid storage condition of the liquid separation tank of the vent system according to the inspection requirements. For kerosene/diesel hydrogenation unit, the liquid level of separation tank of the vent system is required to be not more than 50% and no liquid is allowed in the hydrocracking unit. The liquid shall be cut off in time when the liquid is found.

当班班组应按照巡检要求对放空气系统分液罐存液情况进行检查，煤柴油加氢装置要求放空气系统分液罐液位不超 50%，加氢裂化装置要求放空气系统分液罐原则上不允许带液，发现带液时须及时切液。

4.5.3 Each unit shall reduce emissions while ensuring safety production, and strictly prevent all types of air from running, emitting, dripping and leaking.

各装置应在保证安全生产的情况下做好放空气的减排，严格杜绝各种放空气的跑、冒、滴、漏现象。

4.6 Hydrogen system management 氢气系统管理

4.6.1 The on-duty team leader shall monitor relevant parameters of hydrogen system. In case of any abnormalities, the team leader shall immediately organize team members to inspect and report to the process engineer and on-duty dispatcher.

当班班组应做好氢气系统相关参数的监控，出现异常时班长应立即组织班组人员进行检查，同时汇报工艺技术人员和值班调度。

4.6.2 During shift, the hydrogen consumption shall be stable. When the hydrogen consumption is adjusted significantly, on-duty dispatchers shall be contacted for instructions, and they shall coordinate uniformly.

当班期间应做好平稳用氢，大幅调整用氢量时，应请示值班调度，由值班调度统一协调。

4.6.3 The balance adjustment of the hydrogen system shall be under the unified command of the dispatcher, and the unit shall be cooperating with the pressure control of the hydrogen system.

氢气系统的平衡调整，由调度统一指挥，装置做好氢气系统压力控制的配合工作。

4.6.4 Each unit shall conduct a lights-off inspection of the hydrogen system weekly as

required.

各装置每周按要求做好临氢系统熄灯检查。

5 Supervision and assessment 监督与考核

5.1 The management rules of utility system shall be under the management of process discipline.

公用工程介质管理细则，由工艺专业归口管理。

5.2 Department leaders are responsible for supervision and inspection.

部门领导负责监督检查。

5.3 The assessment is conducted based on 《Performance Evaluation Rules of No.2 Refinery Department》.

考核依据《炼油二部绩效考核细则》。

6 Supplementary Rules 附则

6.1 The rules are managed by the No.2 Refinery Dept. For the unfinished matters, please refer to the company's professional management systems.本细则由炼油二部归口管理，未尽事宜参照公司各专业管理制度等执行。

6.2 The preparation and approval of the version of these rules are shown in Table 1. 本细则版本编制和审批情况见表 1。

表 1 文件版本编制和审批情况

1	21/05/2020	Yang Shi Hai 杨仕海	Hai Cheng 海诚	Sun Jian Huai 孙建怀
Version 版本	Issued Date 颁布日期	Compiler 编制人	Reviewer 审核人	Approval 批准人