HIBBING PUBLIC UTILITIES COMMISSION
MEETING AGENDA
Date: August 24, 2021 Time: 5:00 p.m.

Chairperson P. Garrity	____	Commissioner J. Bugliosi	____
Commissioner J. Bayliss	____		____
Commissioner J. Hart	____	Legal Counsel A. Borland	____
General Manager L. Peterson	____	Financial Controller M. Anderson	____
Admin Coord P. Rutchasky	____	Local 94 President M. Reger	____

1. CALL TO ORDER

2. ADDS/DELETES

3. APPROVAL OF MINUTES: August 12, 2021

4. CITIZENS' FORUM: *Maximum amount of time per item: 5 minutes*

5. CONSENT AGENDA

   A. Consider approving invoices >$10,000 & review and approve the bills dated August 23, 2021, check numbers 45128 to 45172 and ACH transfers 919201413 to 919201414.
   B. Approve Last Day of Employment D. Olson
   C. Approve MPCA Permit Per the Stipulation Agreement

6. BIDS/QUOTES

   A. MACT/RATA Testing for Boilers 4 & Compliance Testing on Boiler 2
   B. Cooling Tower Fire Protection Systems
   C. Barr Engineering Services

7. PERSONNEL/POLICY

   A. Accounting/Human Resource Hire

8. OLD BUSINESS

   A. Updated Risk Management Plan and Fall Work Schedule

9. NEW BUSINESS

   A. Customer Disconnection Notices and HPU Efforts to Assist

10. ADJOURNMENT

Meeting materials are available at www.hpuc.com
The next regular Commission meeting is scheduled for Tuesday, September 14, 2021 at 5:00 p.m. at the Hibbing City Hall, Council Chambers, 401 E. 21st St., Hibbing MN 55746
COVID-19 Pandemic guidelines must be observed.

File (Commission/agenda/2021/2021-08-24.doc)

MINUTES OF THE PROCEEDINGS

of the Public Utilities Commission, City of Hibbing, St. Louis County, Minnesota

Minutes of the regular meeting of the Public Utilities Commission, Hibbing, Minnesota, 1902 E. 6th Ave., Hibbing, MN 55746, held on August 12, 2021. Meeting held at Hibbing City Hall, 401 E. 21st St., Hibbing MN. Chairperson Garrity called the meeting to order at 5:00 p.m. In attendance were Chairperson Garrity, Commissioner Bugliosi; Commissioner Hart; Commissioner Bayliss; Legal Counsel, Andy Borland; General Manager, Luke Peterson; Financial Controller, Morgan Anderson; and Administrative Coordinator, Penny Rutchasky. Also in attendance was HPAT Rep., Ron Wirkkula; AFSCME Rep., Mark Reger; and Mesaba Maintenance Rep., Jeff Stokes.

Item 2. ADDS/DELETES - None

Item 3. APPROVAL OF MINUTES

Motion by Commissioner Bayliss, supported by Commissioner Bugliosi, to approve the regular meeting minutes of July 27, 2021.

Motion carried unanimously.

Item 4. CITIZENS FORUM - None

Item 5. CONSENT AGENDA

Item 5.A. Review and approve the items over $10,000 and review and approve the bills dated August 12, 2021 check numbers 45033 to 45102.

Item 5.B. Review and approve the payroll paid & overtime report for the July 29, 2021 & August 12, 2021 pay dates.

Motion by Commissioner Bugliosi, supported by Commissioner Bayliss, to approve Consent Agenda Items 5.A. & 5.B., as presented.

Motion carried unanimously.

Item 6. BIDS/QUOTES

Item 6.A. The Commission reviewed the correspondence dated August 11, 2021 from L. Peterson, General Manager, regarding Award Public Bid No. 05-2021: Wood Supply.

Peterson gave background of the bid opening on July 29 reiterating discussions from the June 11 work session regarding utilizing three fuel sources for efficiencies in the power plant for the 2021-22 heating season. He stated that Shermer was the sole bid received, with a bark supply vendor in attendance for bid opening. Peterson mentioned that Shermer has delivered to both the HPU and the VPU and is familiar with the process and understands there is no minimums and flexibility is needed for the pilot season. Commissioner Hart asked about the contract proposal cost, noting it is for 78,000 tons which equals ~$2.62 million. Peterson stated the contract is not for that amount, but the number Commissioner Hart was speaking of would be the maximum, if the wood is burned year-round. Peterson said he spoke to Shermer today to confirm the guaranteed minimum. Peterson explained that in the bid specifications there was a "guaranteed" amount and a "non-guaranteed" amount. It was confirmed that the "non-guaranteed" amount is $29/ton. Commissioner Bugliosi asked about the moisture content in the proposal and the number

of trucks per day. Peterson said it was clarified to bidders that the moisture content is to be no more than 45%, which was the same as the LEA wood specifications. Bugliosi asked if the trucks would be delivered to HPU. Peterson said yes, and there will be approximately 11 trucks per day and weight scale details are still being worked out but it was his hope to continue to use the scales at Hibbing Salvage. Bugliosi asked how the moisture was being calculated. Peterson said Shermer reassured them that the VPU has had no problems with the product he delivers to them. Bugliosi asked if Virginia spec's out their moisture content. Peterson stated he was uncertain about VPU's process but was ensured by Mr. Shermer that the product met specifications for moisture. Commissioner Bugliosi inquired that if the bid is awarded at right now, if the HPU is locked in or if there a cancellation clause? Peterson said that because it is a minimum, if no trucks are needed, the HPU will not be charged, but if trucks are needed, it is $29/ton. Commissioner Hart asked if there was "fuel rider escalation clause" if the price increases? Peterson reiterated $29/ton.

Motion by Commissioner Bayliss, supported by Commissioner Bugliosi, to award Public Bid No. 05-2021: Wood Supply to Shermer Logging in the amount of $29/ton with no minimum or maximum.

Motion carried unanimously.

Item 6.B. The Commissioner reviewed the correspondence dated August 11, 2021 from L. Peterson, General Manager, regarding Award Public Bid No. 06-2021: Vegetation Management.

General Manager Peterson gave background that Lake States Tree Service was the sole bidder in the amount of $75,925.94, and highlighting high priority areas directly under the main 307 & 309 23 kVA feeder lines coming from Minnesota Power. He went on that these feeders supply Hibbing from the MP Substation, and felt that the price was a fair price for the project. Peterson said he felt imperative to address these critical areas, as trees have much to do with animal outages, giving example of an outage in June which involved a customer tree falling on a main feeder line by the Warehouse. Bugliosi asked who put the bid together. Peterson said that he and Esko Savela, Line Crew Leader put the area specifications together keeping in mind the high priority vulnerable areas. He pointed out a few areas that were critical hot spots. Bugliosi asked how many outages have been caused by trees and if there was another area that the $75,000 could be spent for the value. Peterson added that every animal outage is directly related to vegetation management. He mentioned that last three outages were due to animals and estimated that about half of the outages for the year have been animal related. He said there was an exception with the customer tree that took out the town for 2.5 hours, expressing his desire for the aggressive approach to vegetation management. Peterson said he spoke to MP this week after he recognized that MP is partially responsible for vegetation management along the main feeder lines. Peterson stated that he will be addressing this concern in the upcoming negotiations with MP. Commissioner Hart asked about the easement in "Area J", asking if MP would be sharing the cost with the HPU. Peterson said it is expected that MP would provide proper compensation for the shared areas. Peterson thought the bid pricing was fair.

Motion by Commissioner Hart, supported by Commissioner Bayliss, to award Public Bid No. 06-2021: Vegetation Management Lake States Tree Service in the amount of $75,925.94.

Commissioner Bugliosi opposed.
Motion carried 3-1.

Item 7. OLD BUSINESS

Commissioner Bugliosi asked for an update on the Cooling Tower. Peterson said that PCT was on site for preliminary site inspection draft drawings. Barr Engineering was in review and it was expected the draft drawings be signed off for structural analysis by Friday of this week. Peterson stated that fire suppression, relining of the basins, electrical and plumbing requirements are also being spec's out, and he expected it to be an additional $400,000 worth of work to be completed. Cooling tower basin cleanout will begin next week. Scheduling demo and construction will coincide with performance testing for air permitting requirements with the MPCA. Demo is expected to begin mid-September and by the end of October he expects the new cooling towers to be fully functional. He said that foundation work is not expected to be as extensive as first thought. Bugliosi asked for clarification on air permitting and demo. Peterson gave explanation that under the MPCA guidelines, HPU is required to test, which will require Interpol and CemSource to be on site for testing the new SO_2 analyzer on September 16, 2021. Bugliosi asked if FM Global agreed to the fire suppression system. Peterson confirmed yes. Peterson said they watch the meetings and communication has been held and they understand HPU is waiting on Electric Scientific. Peterson said he expects the Electric Scientific proposal sometime next week. This item was placed in the Commission file.

No action taken.

Item 8. NEW BUSINESS

Item 8.A. The Commission reviewed the correspondence dated August 10, 2021 from L. Peterson regarding Water Meter Replacement Program – for Information & Feedback Only. Peterson gave background of the AMI initiative and said that it has been put on the back burner but he would like to see the Utility take a proactive approach as AMI is a part of the future. He stated that he felt the preliminary stages are important to make small moves to get a head and be proactive when an AMI solution is found. He said 4,500 water meters are not ready for AMI and are located in customers basements, requiring Meter Readers to enter homes for accurate reads. It is his intent to get a plan in place to aggressively replace the water meters with an AMI compatible model. Peterson said that meters are less expensive when bought in bulk, and new meters reflect accurate reads. He stated pricing will be shared once obtained when a formal request is sought. He stated that buying in bulk will allow quarterly payments, as lead times are lengthy, and he would like to be future ready. This item was placed in the Commission file.

No action taken.

Item 8.B. The Commission reviewed the correspondence dated August 11, 2021 regarding Utility Progress Report. Peterson stated that he knows it has been a tumultuous past few years and is impressed by the hard work put forth by each and every crew. He

began with the water tower project that was approved in February. He added that the Ansley Water Tower project was completed a month ahead of schedule, and the tower is ready for another 25 years of uninterrupted operations. He thanked the Water Crew, Classic Protective Coatings, and Badger State Inspections for a job well done.

Dredging of the water treatment plant lagoon basins have begun with basin 1 completed and is presently being utilized for backwashing. The ponds have never been dredged and 30+ years of maintenance is being completed for proper function of the basins. The next step is to finalize a backwash plan. Options are being sought and will be under the $250,000 budgeted amount that was initially thought.

Peterson updated that the first water main replacement since 2013 was started today, with directional boring under way.

Peterson said that he has found instances where customer policies need to be clarified or updated. Specifically, a water service problem was found on a service feeding off another customer's service. He stated that the Commission should expect upcoming updates to some policies to be consistent with standard utility practice. He stated there are many opportunities to update policies and to standardize this policy for safe, clean water for the community.

The Heat Crew has been diligently fixing condensate return lines and overseeing gas service installations. The Assumption School, HRA and the 7th Ave. Apartments steam service lines have been repaired. A lost and blocked City sewer line was located and repaired during the project. There were multiple blown expansion joints and work is expected to continue for repairs on 7th Ave. E., 3rd & Howard Street, and Minnesota Street.

Gas Service installations are being installed by Jivery Construction. To date, 10 services of the 72 have been installed in the first week of installations.

The electrical distribution utility has taken a significant blow this year. A large outage due to a customer tree falling on the main feeder line outside of the Warehouse was a big problem. It was discovered this week by the Line Crew Team Leader that the MP Substation equipment was wired wrong. Three recent outages would not have been so lengthy if the servicing by MP of the MP Substation was done correctly. It was discovered that MP replaced the HPU equipment with improper wiring, resulting in reclosers not working properly. The last three outages should have been a quick blip if the relay were working correctly. HPU's MP Accounts Rep will provide a full report as soon as the investigation is completed. This report will be shared with the Commission once received.

Peterson stated that despite the number of outages, customers should feel better protected heading into winter with two fully functioning breakers on Feeders 307 & 309 and the vegetation management program along the main feeder route.

Peterson spoke of the Power Plant and his pride in the team. When Peterson started as General Manager, there were two operating boilers and no operating permits. Now all four boilers are firing and the first URGE test was just competed with Turbine 5 URGEing at 17 MW and Turbine 3 URGEing at 10.5 MW, for a total of 27.5 MW, with both turbines running independently. He said he was pleased with the baseline that it will help establish

capacity accreditation with any power contract. Peterson said he is eager for retesting which will take place after the new cooling towers are in place. He stated that more generation could have been produced had the cooling towers be in good operating condition. Peterson said he is looking forward to generating 32 MW after the cooling towers are in place in October. Peterson thanked and expressed his pride in the business office staff and entire utility for all the hard work this past six months.

Chairperson Garrity expressed his gratitude for the incredible amount of work performed by Financial Controller, Morgan Anderson relating to the audit which was just completed. He also stated he felt the HPU was on more solid ground for upcoming MP contract negotiations because of the ability to generate.

Commissioner Bugliosi asked if a contractor was putting in all the new gas services. Peterson said it was on a touch and go basis, as when the Heat Crew has time, they work on the installations, but Jivery is authorized to do the tie ins. HPU is being billed on a time and material basis.

Chairperson Garrity stated, on record, that customers who are on the list will absolutely have their service installed for the upcoming heating season. This item was for discussion purposes and placed in the Commission file.

No action taken.

Item 9. ADJOURNMENT

Motion by Commissioner Bayliss, supported by Commissioner Hart, to adjourn the meeting at 5:41 p.m.

Motion carried unanimously.

Attest:

_____
Patrick Garrity, Chairperson

_____
Luke Peterson, General Manager

DRAFT

HPU Hibbing Public Utilities

FOR COMMISSION ACTION

Meeting Presentation Date:	August 24, 2021	Agenda Item No.: 5.A.
Subject:	Request for Ratification of Blanket Quotes, Bids and/or Projects > $10,000.	
Department Head:	Luke Peterson, General Manager	
Department (Utility)	Utility-Wide ☑ Production ☑ Distribution	
Background/ History	The Commission approved calendar year 2021 blanket quotes at the December 22, 2020 regular Commission meeting with the following listed supplies or services: Truck-Backhoe Rental; Domestic Water Testing; Water Treatment Plant Chemicals; Blacktop (hot & cold); Unleaded Fleet Fuel; Diesel Fleet Fuel; Boilermaker Services; Millwright Services; Hi Temperature Insulation; Vacuum Cleaning Services; and Public Bids Pipefitter Services & Dig Prep and Restorals. The Commission approved the Pipefitter Services which used the public bid process. Some projects or activities are approved separately by the Commission. Yet at times, it is unknown until after work is performed with the actual cost will be for a specific project or service, for example, restoration work at one location. The Commission has granted authorization for the General Manager to approve spending up to $10,000. *If additional space is required, attach a separate sheet and/or supporting documentation*	
Current	The below, listed by vendors, are projects in which work has been completed and the vendor has submitted an invoice to HPU requesting payment. These invoices are also on the check register with amounts > $10,000 General Manager spending limit:	

Standing Contracts, Inventory, & Memberships by Vendor >$10,000:

Vendor	Amount
Humana Insurance: COBRA/Retiree Health Ins. August 2021	$ 21,968.82
Jivery Construction: Gas Service Installations	$ 11,424.49
MN Dept of Health: Water Supply Connection Fee	$ 13,812.00
Radotich Inc.: 7th Ave. Apts Steam Line	$ 20,727.84
Kinect Energy: Gas Nominations July & Polar Vortex	$351,891.08
Minnesota Power: Monthly Electric Power Demand	$913,106.27

Action Requested	Approve the aforementioned payments.
Budget Impact	Budgeted: ☐ Yes ☐No ☐N/A Amount: $_____ ☑Capital ☑Operational
GM Review/authorization:	☑ Yes ☐ No
Supporting Documentation Attached:	☑ Yes ☐ No

Check Issue Date	Check Number	Payee	Description	Invoice Number	Invoice GL Account Title	Check Amount
08/24/2021	0	MINNESOTA POWER	AIRPORT WELL ELECTRIC CHARGES 06/18/2021-07/18/2021	07262021	ELECTRIC POWER SUPPLY	1,358.03
Total 0:						1,358.03
08/24/2021	45128	ACCESS BROADBAND	MONTHLY INTERNET SERVICE	JULY2042	COMPUTER SERVICE ADMIN	125.00
Total 45128:						125.00
08/24/2021	45129	ACTION BATTERY WHOLESALE	(1) set of (4) 12V batteries. 108Ah. VRLA GEL block.	0058096-IN	REPAIRS ELECT DIST	2,460.00
08/24/2021	45129	ACTION BATTERY WHOLESALE	Battery Rack. 2 Step Seismic Zone 0. 21h x 24l x 19d.	0058096-IN	REPAIRS ELECT DIST	673.00
08/24/2021	45129	ACTION BATTERY WHOLESALE	SALES TAX AND FREIGHT	0058096-IN	REPAIRS ELECT DIST	424.35
08/24/2021	45129	ACTION BATTERY WHOLESALE	Batteries and Charger for Greenhave Substation 4160V	0058416-IN	REPAIRS ELECT DIST	3,812.33
Total 45129:						7,369.68
08/24/2021	45130	AIRGAS NORTH CENTRAL	RENT - OX/NI	9115907306	MISCELLANEOUS SUPPLIES STEAM	44.65
08/24/2021	45130	AIRGAS NORTH CENTRAL	EPA RECERTIFICATION 3 COMPONENT MIX	9116255776	MISCELLANEOUS SUPPLIES STEAM	192.20
08/24/2021	45130	AIRGAS NORTH CENTRAL	RENT - OX/NI	9116255777	MISCELLANEOUS SUPPLIES STEAM	97.77
Total 45130:						334.62
08/24/2021	45131	ANYTIME FITNESS	EMPLOYEE WELLNESS PROGRAM JULY 2021	08032021	PREPAID HEALTH INSURANCE	20.00
Total 45131:						20.00
08/24/2021	45132	ASDCO CONSTRUCTION SUPP	SEAL tight for steam repairs	590976	MISCELLANEOUS EXPENSE STEAM O	986.78
Total 45132:						986.78
08/24/2021	45133	AWWA	American Water Works Association membership	7001944514	MEMBERSHIPS WATER OP	2,095.00
Total 45133:						2,095.00
08/24/2021	45134	BARNA GUZY AND STEFFEN	GENERAL UNEMPLOYMENT	233985	LEGAL FEES ADMIN	180.00
08/24/2021	45134	BARNA GUZY AND STEFFEN	UNEMPLOYMENT APPEAL DEC	234389	LEGAL FEES ADMIN	90.00
Total 45134:						270.00
08/24/2021	45135	BELL OPTICAL	IAN HAGEN SAFETY GLASSES	07312021	SAFETY GLASSES SAFETY / ENV	56.96

Check Issue Date	Check Number	Payee	Description	Invoice Number	Invoice GL Account Title	Check Amount
Total 45135:						56.96
08/24/2021	45136	BERG JOHNSON ASSOCIATES I	flow meters	63454-0	MISCELLANEOUS SUPPLIES STEAM	9,132.06
Total 45136:						9,132.06
08/24/2021	45137	BYERS MEDIA	MONTHLY MANAGED WEB HOSTING- JULY 2021	18175	COMPUTER SERVICE ADMIN	30.00
Total 45137:						30.00
08/24/2021	45138	CHEMTREAT INC.	BL1280.55	CIN010196192	CHEMICAL TREATMENT STEAM OP	1,239.56
08/24/2021	45138	CHEMTREAT INC.	RL124.55	CIN010196192	CHEMICAL TREATMENT STEAM OP	527.31
08/24/2021	45138	CHEMTREAT INC.	BL1581.55	CIN010196192	CHEMICAL TREATMENT STEAM OP	985.50
Total 45138:						2,752.37
08/24/2021	45139	CORE & MAIN	1 1/2" SENSUS C2 OMNI Meter	P285779	CUSTOMER METERS WATER DISTR	1,326.50
Total 45139:						1,326.50
08/24/2021	45140	CW Technology	APC UPS Configuration	CW67167	COMPUTER SERVICE ADMIN	792.67
Total 45140:						792.67
08/24/2021	45141	DALCO	janitoral supplies	3814055	JANITORIAL/CLEANING SUP	975.93
08/24/2021	45141	DALCO	paper towel	3818237	JANITORIAL/CLEANING SUP	85.61
Total 45141:						1,061.54
08/24/2021	45142	DELUXE	DEPOSIT TICKET BOOKS	02049873360	OFFICE SUPPLIES	79.23
Total 45142:						79.23
08/24/2021	45143	ENERGY ECONOMICS INC	Large volume gas meter testing.	48360	METER MAINTENANCE EXPENSE GA	3,106.48
08/24/2021	45143	ENERGY ECONOMICS INC	Rotary Gas Meter & Parts For Washington School Project.	48379	CUSTOMER METERS GAS DISTR	3,365.36
Total 45143:						6,471.84
08/24/2021	45144	EXCEL BUSINESS SYSTEMS	TOSHIBA 2E-STUDIO 233	66115	PRINTING ADMIN	32.06
08/24/2021	45144	EXCEL BUSINESS SYSTEMS	TOSHIBA E-STUDIO 5506ACT	66116	PRINTING ADMIN	599.59
08/24/2021	45144	EXCEL BUSINESS SYSTEMS	TOSHIBA E-STUDIO 2515AC	66118	PRINTING ADMIN	93.25

Check Issue Date	Check Number	Payee	Description	Invoice Number	Invoice GL Account Title	Check Amount
08/24/2021	45144	EXCEL BUSINESS SYSTEMS	TOSHIBA E-STUDIO 2050C	6617	PRINTING ADMIN	38.30
Total 45144:						763.20
08/24/2021	45145	FERGUSON ENTERPRISE INC #	12" single EP expansion.	8549329	REPAIRS TO MAINS STEAM DISTR	3,873.74
08/24/2021	45145	FERGUSON ENTERPRISE INC #	Pipe and fittings for 7th Ave. Apt job.	8644477	MISCELLANEOUS SUPPLIES STEAM	1,245.34
Total 45145:						5,119.08
08/24/2021	45146	FERGUSON ENTERPRISES #16	6" 150 PSI double bellow flanged expansion joint	8613778	EQUIP REPAIRS & MAINT STEAM MA	2,382.43
Total 45146:						2,382.43
08/24/2021	45147	FERGUSON WATERWORKS #25	2" socket weld 1/4 turn plug valves	0480445	MISCELLANEOUS SUPPLIES GAS MAI	317.37
Total 45147:						317.37
08/24/2021	45148	FRONTIER ENERGY	CIP Management fees May 2021	187262	CONERSATION IMPROVEMENT PROG	3,302.87
08/24/2021	45148	FRONTIER ENERGY	CIP Management fees June 2021	187459	CONERSATION IMPROVEMENT PROG	3,342.14
08/24/2021	45148	FRONTIER ENERGY	CIP Management fees July 2021	187651	CONERSATION IMPROVEMENT PROG	3,310.05
Total 45148:						9,955.06
08/24/2021	45149	GRAYBAR ELECTRIC COMPAN	1 1/2 cond strap	9322578031	WORK/CONSTRUCTION IN PROGRES	14.12
08/24/2021	45149	GRAYBAR ELECTRIC COMPAN	1 1/2 rgd cmp cpl	9322578031	WORK/CONSTRUCTION IN PROGRES	71.29
08/24/2021	45149	GRAYBAR ELECTRIC COMPAN	HARD POINT TEST LEAD SET	9322578034	EQUIP REPAIRS & MAINT ELECT MA	85.47
08/24/2021	45149	GRAYBAR ELECTRIC COMPAN	TAA 100MB ST MMF MEDIA CONVERTER	9322692888	COMPUTER SUPPLIES WATER OP	1,368.88
Total 45149:						1,539.76
08/24/2021	45150	HACH COMPANY	aa Free Chlorine Reagent Set DPD	12588314	CHEMICAL TREATMENT WATER OP	217.35
Total 45150:						217.35
08/24/2021	45151	HUMANA INSURANCE CO.	RETIREE HEALTH INSURANCE	292690274	RETIREES-HEALTH LIFE LTD INSUR	21,349.98
08/24/2021	45151	HUMANA INSURANCE CO.	RETIREE HEALTH INSURANCE COBRA	292690274	RETIREES-HEALTH LIFE LTD INSUR	618.84
Total 45151:						21,968.82
08/24/2021	45152	IRON ACADEMY MARTIAL ARTS	SELF-PROTECTION COURSE - LEVEL 1	000055	MISC NONOPERATING EXPENSE	180.00

Check Issue Date	Check Number	Payee	Description	Invoice Number	Invoice GL Account Title	Check Amount
Total 45152:						180.00
08/24/2021	45153	JIVERY CONSTRUCTION	GAS SERVICE INSTALLATION 2021	100768138	GAS NEW SERVICES	2,669.49
08/24/2021	45153	JIVERY CONSTRUCTION	GAS SERVICE INSTALLATION 2021	100768139	GAS NEW SERVICES	8,755.00
Total 45153:						11,424.49
08/24/2021	45154	LAKE COUNTRY POWER	JULY 2021 USAGE ANTONELLI RD	08102021	ELECTRIC POWER SUPPLY	175.00
Total 45154:						175.00
08/24/2021	45155	LAPP TANNEHILL	Water meter wire for remote touch pads. 8 - 500' reels	MN419805	MISCELLANEOUS SUPPLIES METER	1,274.40
Total 45155:						1,274.40
08/24/2021	45156	LOWES	hot water heaterfor wash sink	11960445	SMALL TOOLS TRANSPORTATION	223.39
08/24/2021	45156	LOWES	2X6X16 LUMBER FOTH 7TH AVE	2322359	MISCELLANEOUS SUPPLIES STEAM	167.76
08/24/2021	45156	LOWES	ASPHALT, CONCRETE	2807110	MISCELLANEOUS SUPPLIES STEAM	172.25
08/24/2021	45156	LOWES	FD THR SHIELD CAT6 P	3292684	SMALL TOOLS WATER DISTR	32.60
08/24/2021	45156	LOWES	5 Gal Bottled Water	5655093	MISCELLANEOUS SUPPLIES	6.65
08/24/2021	45156	LOWES	micro fiber rags for Janitor	5663727	JANITORIAL/CLEANING SUP	46.88
08/24/2021	45156	LOWES	hand torch	7569125	SMALL TOOLS WATER DISTR	50.99
Total 45156:						700.52
08/24/2021	45157	LVC COMPANIES, INC.	fire exstinguisher	67134	VEHICLES	108.99
Total 45157:						108.99
08/24/2021	45158	MADISON NATIONAL LIFE	LONG-TERM DISABILITY SEPTEMBER 2021	1456140	PREPAID LIFE DISABILITY INSURN	2,939.27
Total 45158:						2,939.27
08/24/2021	45159	MESABI GLASS WINDOW & DO	Window Repair to GM Office	15281	BUILDING REPAIRS & MAINT	500.00
Total 45159:						500.00
08/24/2021	45160	MESABI MAINTENANCE SERVI	CONSULTING BLRS AND TURBINES	2021-2-7	WORK/CONSTRUCTION IN PROGRES	7,300.00
Total 45160:						7,300.00

Check Issue Date	Check Number	Payee	Description	Invoice Number	Invoice GL Account Title	Check Amount
08/20/2021	45161	SCHACHT, JAMES	LOAN APPLICATION FEE REFUND	08202021	VOL RES HEAT CONV LOAN APP FEE	350.00
Total 45161:						350.00
08/23/2021	45162	MN DEPT HEALTH	WATER SUPPLY CONNECTION FEE	07012021-2930	MN WATER CONNECTION FEE	13,812.00
Total 45162:						13,812.00
08/23/2021	45163	NORTHERN BUSINESS PRODU	correction pen	607524-0	OFFICE SUPPLIES	2.74
Total 45163:						2.74
08/23/2021	45164	RADKO IRON & SUPPLY	11GA 2' X2' PRECUT PLATE	102/1	MISCELLANEOUS SUPPLIES ELECT M	59.98
Total 45164:						59.98
08/23/2021	45165	RADOTICH INC	7TH AVE APARTMENTS	8489	WORK/CONSTRUCTION IN PROGRES	20,727.84
Total 45165:						20,727.84
08/23/2021	45166	RGGS LAND & MINERALS	payment for access/use license 13498 - power lines	13489-0921	MISCELLANEOUS EXPENSE	600.00
Total 45166:						600.00
08/23/2021	45167	TONER PLANET	ship samples to MDH	309363	MISCELLANEOUS EXPENSE WATER D	62.85
08/23/2021	45167	TONER PLANET	ship out samples	309619	MISCELLANEOUS EXPENSE WATER D	110.98
Total 45167:						173.83
08/23/2021	45168	TOTAL TOOL	NR1 nut runner W/7/16" quick change adapter for impact drill	02522649	SMALL TOOLS ELECT DISTR	396.30
08/23/2021	45168	TOTAL TOOL	adapter for NR1 nut runner for impact socket	02522649	SMALL TOOLS ELECT DISTR	152.20
08/23/2021	45168	TOTAL TOOL	SALES TAX	02522649	MISCELLANEOUS EXPENSE ELECT DI	57.53
Total 45168:						606.03
08/23/2021	45169	UHL	Admin Bldg Repairs to AC System	33793	BUILDING REPAIRS & MAINT	928.00
Total 45169:						928.00
08/23/2021	45170	UPS	SHIPPING	00001982W432	MISCELLANEOUS EXPENSE	41.40

Check Issue Date	Check Number	Payee	Description	Invoice Number	Invoice GL Account Title	Check Amount
Total 45170:						41.40
08/23/2021	45171	VISA	NORTH SPAN & INFOSOFT	07032021GAR	MISCELLANEOUS EXPENSE	929.00
Total 45171:						929.00
08/23/2021	45172	WESCO DISTRIBUTION INC	DEAD END 407 D	853506	STORES INVENTORY	311.00
08/23/2021	45172	WESCO DISTRIBUTION INC	POLY DEAD/SUSP INSL 15KV	865427	STORES INVENTORY	216.40
08/23/2021	45172	WESCO DISTRIBUTION INC	336 DOUBLE TOP TIE	870330	STORES INVENTORY	949.00
Total 45172:						1,476.40
08/23/2021	919201	KINECT ENERGY, INC	NOMINATIONS JULY 2021	331015	GAS SUPPLY RESALE PIPELINE RES	215,536.33
08/23/2021	919201	KINECT ENERGY, INC	POLAR VORTEX PAYMENT JULY 2021	331788	GAS SUPPLY RESALE PIPELINE RES	136,354.75
Total 919201413:						351,891.08
08/23/2021	919201	MINNESOTA POWER ACH DO N	MONTHLY BILLING 06/30/2021-07/31/2021	08032021	ELETRIC POWER DEMAND RESALE	913,106.27
Total 919201414:						913,106.27
Grand Totals:						1,405,832.59

Hibbing Public Utilities

HIBBING PUBLIC UTILITIES COMMISSION

1902 E 6TH AVE
HIBBING, MINNESOTA 55746-0249

TELEPHONE 218-262-7700
FAX 218-262-7702

Item 5.B.

August 24, 2021

Patrick Garrity
Commission Chairperson
1902 E. 6th Ave.
Hibbing, MN 55746

Re: Approve last day of Darnea M. Olson

Dear Commissioners,

Darnea M. Olson has worked for the Public Utilities since 2003. His last day of employment per the HPU payroll system was August 10, 2021.

We thank Darnea for his 17 years of service to HPU and its customers.

Sincerely,

HIBBING PUBLIC UTILITIES COMMISSION

Luke J. Peterson,
General Manager

LJP/plr
cc: Commission
A. Borland
File: commission/08 24 2021Darnea Olson yrs of service.doc

Hibbing Public Utilities

Item 5.C.

1902 E 6TH AVE
HIBBING, MINNESOTA 55746-0249

HIBBING PUBLIC UTILITIES COMMISSION

TELEPHONE 218-262-7700
FAX 218-262-7702

August 24, 2021

Patrick Garrity
Commission Chairperson
1902 E. 6th Ave.
Hibbing, MN 55746

Re: MN Pollution Control Agency (MPCA) Permit per Stipulation Agreement

Dear Commissioners,

Please find attached an introduction letter from Ann Curnow of ERM for the permit application that will be filed with the MPCA this week, which completes the requirements of the Stipulation Agreement approved in January.

Thank you for your consideration in this matter.

Sincerely,

HIBBING PUBLIC UTILITIES COMMISSION

Luke J. Peterson

Luke J. Peterson,
General Manager

LJP/plr
Attachments
cc: Commission
A. Borland
File: commission/08 24 2021 MPCA Stip Agmt.doc

ERM

222 South 9th Street
Suite 2900
Minneapolis, MN 55402

Telephone: +1 612 347 6789
Fax: +1 612 347 6780

www.erm.com

August 17, 2021

Fiscal Services – 6th Floor
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

Re: Major Permit Modification Application
Air Emission Permit No. 13700027-101
Amended March 10, 2021 Permit No: 13700027-102
Hibbing Public Utilities Commission

Dear Fiscal Services:

Hibbing Public Utilities Commission (HPUC) is submitting the enclosed Major Permit Amendment Application to incorporate changes that were not previously incorporated in to the air operating permit when it was las issued by the Minnesota Pollution Control Agency (MPCA) on March 20, 2021. The permit was amended to satisfy a Stipulation Agreement with the MPCA which HPUC signed on January 12, 2021 and the MPCA signed on January 21, 2021.

The revised permit amendment issued in March included the required changes except stipulating that performance testing on boilers EQUI 2 and EQUI 7 is only required when solid fuel is to be fired and that the facility is allowed 180 days to complete the required performance testing upon firing with solid fuel. In addition, a caveat that the electrostatic precipitator on boiler EQUI 7 is not required to be operated if the boiler is only being fired with natural gas. These changes, in addition to the permit changes recently made in the MPCA amended Permit No. 13700027-102 in March satisfy the Stipulation Agreement.

The permit amendment application also contains other items that HPUC would like to be clarified or changed. For instance removing the eastern cooling towers from the permit because those structures were demolished. In addition to the permit changes, ERM has updated the most recent facility-wide emission inventory to incorporate any changes to EPA emission factors, calculation methodologies (if any), and to more accurately align the calculation spreadsheet with the MPCA GI-07 Form and MPCA guidelines.

This major permit amendment application contains the Site Location Map, MPCA Forms, Permit Pages with Changes Marked, Updated Facility-Wide Emission Inventory, and January 26, 2021 Stack Test Results. A check for $7,125 is included with this application to cover the initial processing fees per the MPCA SCP-01 Form. Also enclosed with this permit modification application is a fully editable Excel spreadsheet of the emission calculations.

REQUESTED CHANGES

The changes are listed below and a summary of permit pages to be changed and proposed language for the change is listed in Table 1. The attached appendices include the requested changes in the MPCA forms (Appendix A) and the permit pages that have been included to show language that is to be struck and where appropriate, revised language to be inserted (Appendix B).

The changes being requested are:

1. Stipulate that performance testing on boilers EQUI 2 and EQUI 7 is only required when solid fuel is to be fired. The facility will be allowed 180 days to complete the required performance testing upon firing with solid fuel.

    a. EQUI 2 Parameters: PM, PM_{10}, Filterable PM, HCl, Hg

    b. EQUI 7 Parameters: PM, PM_{10}, Filterable PM, $PM_{2.5}$, NH_3, Hg, NO_X, HCl

2. Add stipulation that when EQUI 2 is only operating on natural gas the continuous emission monitor (CEMs) EQUI 25 for sulfur dioxide (SO2) and the continuous opacity monitor (COM) EQUI 28 are not required to be operated.

3. Add that if wood is not being fired in EQUI 7, the wood handling system is not being operated and, as such, the requirement to monitor the associated wood handling baghouses is not required. Likewise, testing of the wood handling system and inspections of associated baghouses would not be required baghouses associated with wood handling system are TREA 10, TREA 11, and TREA 12. The wood handling system is comprised of EQUI 8 (EU008) Enclosed wood unloading equipment, EQUI 9 (wood conveyor system, EU010), and EQUI 10 (EU011) wood transfer/metering bin.

    a. EQUI 8 controlled by TREA 10 – Change language to indicate that testing is not required of the wood handling system if solid fuel has not been fired in EQUI 7. Add caveat that testing for opacity will be required within 60 days of resuming firing with solid fuel in EQUI 7 and subsequent operation of the wood handling system EQUI 8.

        i. Permit Requirement listed in Attachment 1, EQUI 8 Sequence 7 and 8 for EQUI 8. Change language to indicate that testing is not required of the wood conveying system if solid fuel has not been fired in EQUI 7. Add caveat that testing for opacity will be required within 180 days of resuming firing with solid fuel in EQUI 7 and subsequent operation of the wood handling system EQUI 9.

        ii. Permit Requirement Number 5.35.12 – (D, E, F, F, G) these activities are not required unless EQUI 9 is in operation during the specified time period.

        iii. Permit Requirement Number 5.35.13 – Periodic Inspections – add language that inspections are not required in any calendar quarter where EQUI 9 was not operated.

    b. EQUI 9 controlled by TREA 11 –

        i. Permit Requirement listed in Attachment 1, EQUI 9 Sequence 7 and 8 for EQUI 9 - Change language to indicate that testing is not required of the wood conveying system if solid fuel has not been fired in EQUI 7 during the subsequent 36 months. Add caveat that testing for opacity will be required within 180 days of resuming firing

with solid fuel in EQUI 7 and subsequent operation of the wood conveying system EQUI 9.

ii. Permit Requirement Number 5.36.12 – (D, E, F, F, G) these activities are not required unless EQUI 9 is in operation during the specified time period.

iii. Permit Requirement Number 5.36.14 – Periodic Inspections – add language that inspections are not required in any calendar quarter where EQUI 9 was not operated.

c. EQUI 10 controlled by TREA 12 –.

i. Permit Requirement listed in Attachment 1, EQUI 10 Sequence 6 and 7 for EQUI 10. Change language to indicate that testing is not required of the wood transfer metering bin if solid fuel has not been fired in EQUI 7 during the subsequent 36 months. Add caveat that testing for opacity will be required within 180 days of resuming firing with solid fuel in EQUI 7 and subsequent operation of the wood transfer/metering bin EQUI 10.

ii. Permit Requirement Number 5.35.12 – (D, E, F, F, G) these activities are not required unless EQUI 10 is in operation during the specified time period.

iii. Permit Requirement Number 5.35.13 – Periodic Inspections – add language that inspections are not required in any calendar quarter where EQUI 10 was not operated.

4. Stipulate that when only firing natural gas that the electrostatic precipitator (ESP), TREA 9 associated with the wood boiler EQUI 7 is not required to be operated. This is a permit condition that is already in place for the other boilers onsite when they are not combusting solid fuel.

5. Clarify that RATAs and CGAs are not required on the monitors associated with EQUI 7 unless that boiler is operating.

6. Remove mercury reduction plan requirements because the dates have passed and with less use of coal, actual mercury (Hg) emissions have fallen well below the threshold for reduction requirements.

7. Update steam rates from 85,580 lbs/hour to 100,000 pounds/hour for EQUI 3 based on performance test completed on January 26, 2021. A copy of the performance test is attached in Appendix C.

8. Insert clause in the permit to more clearly indicate that Boiler MACT testing should be performed at 75% of the total Boiler MACT limit in order to maintain testing schedule of every 3 years with the caveat that Boiler MACT testing is only required when solid fuels are fired.

9. Strike the eastern cooling towers from the permit (STRU 8, STRU 23, and STRU 24), as they were demolished.

Table 1: Summary of Permit Modifications and Permit Pages

Change Description	Proposed Language or Just Strike-Through of Permit	Requirement Number (RN) and Permit Pages
Add statement to COMG 2 – Units designed to burn solid fuel, NESHAP subp. DDDDD (EQUI 1, 2, 3, and 7)	Add language that if test results for 2 consecutive years are less than 75% of emission limit then performance testing for that particular pollutant can be at a frequency of every 3 years.	MPCA can determine where to add.
Define performance testing requirements for EQUI 2 (boiler 2A).	Testing required only when firing coal, and then within 180 days	Page 90, RN 6.4.2; Page 91, RN 6.4.3, 6.4.4; Page 92, RN 6.4.5, 6.4.6
Define performance testing requirements for EQUI 7 (boiler 4).	Testing required only when firing biomass, and then within 180 days	Page 99, RN 6.9.2, 6.9.3, 6.9.4, 6.9.5; Page 100, RN 6.9.6, 6.9.7
Clarify the CEMs required when EQUI 2 (boiler 2A) fires natural gas.	When only natural gas is fired the SO_2 and Opacity monitors are not required.	Page 40, RN 5.7.12, 5.7.17; Page 41, RN 5.7.18 Page 57, RN 5.21.1, 5.21.7 (EQUI 25 – SO_2 CEM) Page 61, RN 5.24.1; Page 62, RN 5.24.11 (EQUI 28 – COM opacity)
Remove requirement to monitor wood feed systems for EQUI 7 when not firing solid fuel. EQUI 8 – Enclosed Wood Unloading – Loading-Unloading Equipment, EQUI 9 Wood Conveyor System, and EQUI 10 Wood Transfer/Metering Bin – Silo/Bin.	No inspections of baghouses unless wood feed system in operation. Wood feed system will only operate when EQUI 7 is firing with wood.	Baghouses TREA 10, TREA 11, TREA 12: Pages 78, RN 5.35.6; Page 79, RN 5.36.6; Page 81, RN 5.37.6.
Stipulate that TREA 9 (ESP) does not need to be operated when EQUI 7 is only firing natural gas.	The Permittee shall vent emissions from EQUI 7 to TREA 9 whenever EQUI 7 operates, except when EQUI 7 is only firing natural gas."	Page 46, RN 5.12.20; Page 75, RN 5.34.1; Page 76, RN 5.34.8., 5.34.11.
Remove requirement for RATAs and CGAs on monitors associated with EQUI 7 unless the boiler is operating.	RATAs and CGAs would be required for EQUIs 20, 21, and 22 only when the EQUI 7 boiler is operating.	(Page 103, RN 6.14.1, 6.14.2, 6.14.3, 6.15.2, 6.15.3; Page 104, RN 6.16.1, 6.16.2
Remove mercury reduction plan requirements.	The compliance time has passed and it seems this requirement can be removed from the permit.	Page 9, TFAC 5.1.1
Update steam rates from 85,580 lbs/hour to 100,000 pounds/hour for EQUI 3.	"The Permittee shall limit EQUI 3 Steam Flow <=100,000 pounds per hour 30-day rolling average."	Page 42, RN 5.8.14.
Clarify that testing is not required if coal is not being combusted in EQUI 1.	The Permittee is not required to test EQUI 1 if EQUI 1 is not combusting coal and hasn't combusted coal in the 60 days	Add caveat to Page 88, RN 6.3.2, 6.3.3; Page 89, RN 6.3.4 and 6.3.5, Page 90, RN 6.3.6.

	prior to the test due date, or if EQUI 1 is idle or combusting only natural gas when the test is due.	
Clarify that testing is not required if coal is not being combusted in EQUI 3.	The Permittee is not required to test EQUI 3 if EQUI 3 is not combusting coal and hasn't combusted coal in the 60 days prior to the test due date, or if EQUI 3 is idle or combusting only natural gas when the test is due.	Add caveat to Page 93, RN 6.5.2, 6.5.3; Page 94, RN 6.5.4 and 6.5.5, Page 95, RN 6.5.6.
Clarify that testing is not required if wood is not being combusted in EQUI 7.	The Permittee is not required to test EQUI 7 if EQUI 7 is not combusting wood and hasn't combusted wood in the 60 days prior to the test due date, or if EQUI 7 is idle or combusting only natural gas when the test is due.	Add caveat to Page 99, RN 6.9.2, 6.9.3; 6.9.4, 6.9.5; Page 100, RN 6.9.6 and 6.9.7.
References to eastern cooling tower (STRU 8) and stacks for eastern cooling tower (STRU 23 and STRU 24).	Remove from permit.	Page 8, Summary Table; Page 110, Stack Modeled Parameters (Point Source PM10 Emissions) Table; Page 111, Stack Modeled Parameters (Point Source NO2 Emissions) Table; Page 112, Stack Modeled Parameters (Point Source NO2 Emissions) Table; Page 114, Stack Modeled Parameters (Point Source SO2 Emissions) Table

SUMMARY OF REVISED PERMIT NO. 13700027-102

MPCA issued revised Permit No. 13700027-102 on March 20, 2021. The amended Permit No. 13700027-102 revises EQUI 1, EQUI 3, and EQUI 7 steam flow limits, the TREA 9 electrostatic precipitator total power requirement, and the EQUI 1 opacity operating limit based on performance testing under Minn. R. 7017.2025, subp. 3 and 40 CFR part 63, subp. DDDDD. Permit No. 13700027-102 also revises the steam flow limit requirement for each of the four boilers (EQUI 1, EQUI 2, EQUI 3, and EQUI 7) to clarify the method for resetting the steam flow limit, imposes the trichloroethylene usage ban that commences June 1, 2022 (as required by Minn. Stat. Section 116.385) to assure compliance with applicable requirements, and revises the EQUI 7 requirements to vent emissions to associated control equipment (TREA 7, TREA 8, and TREA 9). Additionally, this amendment corrects various material mistakes in existing Permit No. 13700027-101. These corrected mistakes include citation errors, absence of the reference to Appendix D in the total facility requirement for complying with the permit appendices, and incorrect application of the Minnesota Indirect Heating Equipment Rule (Minn. R. 7011.0500 - 7011.0550) to EQUI 7. This permit also includes an administrative amendment to extend test due dates for these four boilers.

The modifications requested as part of this submittal were not addressed in Permit No. 13700027-102. The changes are being sought because HPUC is operating more frequently on natural gas to

meet steam demand, and some of the requirements were directly associated with firing solid fuels. HPUC is keeping the ability to fire coal as a permitted option in the event electrical power is required to be generated under contract with Minnesota Power.

CHANGE IN POTENTIAL EMISSIONS

The modification will not increase potential emissions at the facility. However, the facility-wide emissions inventory was updated to be more consistent with MPCA guidelines and improve the citations. In addition, if USEPA emission factors or calculation methodologies were revised since the last inventory, those updates were included. Table 2 summarizes the potential emissions as the facility is currently permitted and any changes associated with an update to the facility-wide potential-to-emit (PTE) emissions inventory. The table summary is limited to criteria pollutants, carbon dioxide equivalent, singular hazardous air pollutant and cumulative hazardous air pollutants. The detailed emission inventory is located in Appendix D. A fully executable version is provided on the computer disc enclosed with this application.

Table 2: Summary Potential Emission Inventory Update

Pollutant	Previous Facility-Wide Permitted PTE* (tons per year)	Updated Facility-Wide PTE (tons per year)
PM	1,849	641
PM_{10}	309.9	149
$PM_{2.5}$	204.2	114
SO_2	2,705	2,705
NOx	2,109	1,696
CO	1,428	1,463
CO_2e	890,763	857,536
VOC	33.2	30.7
Single HAP**	227.3	84.7
All HAPs	276.1	139.4

*PTE is also referred to as Total Facility Limited Potential Emissions when a facility holds a federally enforceable permit which limits actual potential emissions. The actual emissions are far lower than the PTE. For instance the PTE of PM is 1,849 tons per year but actual PM emissions were 4.29 tons per year in 2019.

**Largest single HAP for the updated PTE is hydrogen chloride.

CLOSING

If you have any questions concerning this application or need anything in a different format, please call me at (612) 347-7112 or email me at ann.curnow@erm.com.

Sincerely,

Ann M. Curnow
Project Manager – Environmental Resources Management

Enclosures: Major Modification Permit Application
Check # for Permit Application Processing
Computer Disc with Editable Excel Spreadsheet of Emission Inventory Calculations

Hibbing Public Utilities

HIBBING PUBLIC UTILITIES COMMISSION

Item 6.A.

1902 SIXTH AVENUE EAST
P.O. BOX 249
HIBBING, MINNESOTA 55746-0249

TELEPHONE 218-262-7700
FAX 218-262-7702

August 23, 2021

Patrick Garrity
Commission Chairperson
1902 E. 6th Ave.
Hibbing, MN 55746

Re: Boiler MACT, RATA & Compliance Testing on Boiler 2 & 4

Dear Commissioners,

As part of HPU's permit with Minnesota Pollution Control Agency and the Stipulation Agreement Agreed to in January 2021, a performance test is required for Boiler 2 and Boiler 4, along with regular MACT and RATA testing.

Please find attached scope from Interpoll Laboratories for this testing, which is scheduled for the week of September 13, 2021.

Thank you for your consideration in this matter and I will be available at the regular meeting of August 24, 2021 to answer any questions you may have.

Sincerely,

HIBBING PUBLIC UTILITIES COMMISSION

Luke J. Peterson,
General Manager

LJP/plr
Attachment
cc: Commission
A. Borland
File: commission/08 24 2021 MACT RATA Compliance Blr 2 & 4.doc

Interpoll Laboratories, Inc.
SOURCE TESTING DEPARTMENT
4500 Ball Road N.E.
Circle Pines, Minnesota 55014-1819

TEL: (763) 786-6020
FAX: (763) 786-7854

BOILER MACT, RATA AND COMPLIANCE TESTING ON BOILERS 2 & 4 AT THE HIBBING PUBLIC UTILITIES PLANT IN HIBBING, MINNESOTA

HIBBING PUBLIC UTILITIES
1902 Sixth Avenue East
Hibbing, Minnesota 55746

In Response to:

RFP of 08-16-2021

Attention:

Luke Peterson

Proposal Number 11442
August 17, 2021
EJ/ehj

1 INTRODUCTION

INTERPOLL LABORATORIES, INC. submits this proposal for stack sampling services to Hibbing Public Utilities in response to the Verbal RFP of August 17, 2021. Interpoll Labs proposes to conduct Boiler MACT emission compliance testing and RATA testing on Boiler 4, as well as compliance testing on Boiler 2 at the Hibbing Public Utilities Plant in Hibbing, Minnesota. **The following scope of work must be verified by Hibbing P.U., since a written RFQ was not provided.**

Unless otherwise noted, the determinations will be conducted according to the provisions of EPA Methods cited in CFR Title 40, Part 60, Appendix A (revised July 1, 2021) using equipment meeting the specifications therein.

2 DESCRIPTION OF SERVICES TO BE OFFERED

INTERPOLL LABORATORIES, INC. agrees to perform the activities described in this section.

2.1 Standard Services

2.1.1 Location

Hibbing, Minnesota

2.1.2 On-Site Work

EQUI2/SV019 Boiler No. 2

The following series of determinations will be performed on the No. 2 Boiler:

a. Volumetric flow rate and gas temperature determination -EPA Method 2.

b. Gas composition (one (1) integrated flue gas sampling concurrent with each test run for every pollutant with analysis for CO_2 and O_2) - EPA Method 3A.

c. Gas moisture content (one (1) determination concurrent with each test run for every pollutant) - EPA Method 4.

d. PM/PM10[1] concentration and emission rate (three (3) 1-hr determinations[2]) – EPA Method 5. Condensable particulate will be collected in the back half of the Method 5 train in accordance with EPA Method 202 to determine PM10 emissions.

e. Oxides of nitrogen concentration and emission rate (three (3) one-hour determinations) – EPA Method 7E (verify emission factors[3]).

---

[1] PM/PM10 testing is not a permit requirement when combusting Natural Gas, however, there was a note in Table 7 or section 3.3 stating a test requirement by September 10, 2021

[2] If PM testing is required for MACT purposes, 2DSCM sample volume (approx. 2-hr runs) will be required. This does not appear to be a requirement per the permit since coal is not being combusted.

[3] This testing requirement was not found in the permit, however, it has been part of testing events in the past (Last time being July 26, 2017).

EQUI7/SV007 Boiler No. 4

The following series of determinations will be performed on the No. 4 Boiler:

a. Volumetric flow rate and gas temperature determination -EPA Method 2.

b. Gas composition (one (1) integrated flue gas sampling concurrent with each test run for every pollutant with analysis for CO_2 and O_2) - EPA Method 3A.

c. Gas moisture content (one (1) determination concurrent with each test run for every pollutant) - EPA Method 4.

d. Filterable PM concentration and emission rate (three (3) **2 dscm** determinations) – EPA Method 5. Condensable particulate will be collected in the back half of the Method 5 train in accordance with EPA Method 202 to determine PM10/PM2.5 emissions.

e. Mercury concentration and emission rate (three (3) $\geq$ one-hour determinations) – Method 30B.

f. Hydrogen chloride concentration and emission rate (three (3) $\geq$ one-hour and **1 dscm** determinations) – EPA Method 26A.

g. Ammonia concentration (three (3) $\geq$ one (1) hour determinations) – will be collected in the Method 26A sampling train.

BOILER 4 CEM

The following series of determinations will be performed in 45-minute intervals on the Boiler 4 NOx/CO/O2 CEM:

a. Oxygen and carbon dioxide concentration (nine (9) 21-minute determinations) - EPA Method 3A.

b. Gas moisture content (nine (9) 21-minute determinations) - EPA Method 4.

c. Oxides of nitrogen concentration (nine (9) 21-minute determinations) - EPA Method 7E.

d. Carbon monoxide concentration (nine (9) 21-minute determinations) - EPA Method 10.[4]

[4] If new analyzers are being installed, certification test requirements may apply, which require notification and additional QA/QC by the CEM vendor or facility.

2.1.3 Report

The report will be submitted electronically within 45 days of the test.

2.2 Optional Services

2.2.1 Fuel Analysis Options

a. Short Proximate Analysis Should this option be purchased, a short proximate analysis of a fuel sample will be performed.

2.2.2 ERT Reporting

a. Additional Electronic reporting is required for MACT and CEM Performance Evaluations (RATAs). If this option is purchased, Interpoll Laboratories Personnel will perform Data entry and ERT reporting entry, subject to availability of personnel to complete the work. Report submission will be performed to CEDRI by Facility Personnel.

3 ITEMS FURNISHED BY INTERPOLL LABORATORIES

All labor and materials required for obtaining the samples, analyzing and reducing the data, and preparing the report will be furnished by INTERPOLL LABS.

4 ITEMS FURNISHED BY THE CLIENT

4.1 Ports

All test ports will be furnished and installed by the Purchaser before the scheduled testing date. The Purchaser should consult Interpoll Labs for guidance on the exact number and location of test ports. All test ports will be opened and cleaned to full original diameter the day before the test and left hand-tight. If the ports are not opened and cleaned, Interpoll Labs personnel will notify the plant and delay the start of testing until the ports have been opened and cleaned. If plant personnel are not available, Interpoll Labs personnel will attempt to open the ports and clean them. Any time spent waiting for ports to be cleaned or any time spent opening and/or cleaning the ports will be charged and billed as delay time.

4.2 Scaffolding

Scaffolding and/or an access platform and ladder where required will be furnished and erected by the Purchaser before the scheduled testing date. Staging should meet OSHA safety standards and provisions made to ensure that the clearance requirements for the sampling equipment are closely observed.

4.3 Power

Electrical power (110 VAC 20 amp service) will be made available within 50 feet of the test site(s).

The Interpoll Labs Mobile CEM trailer has the following power requirements.

- **A 208-220/110-120 VAC, single phase, 100 Amp service**
- **The mobile CEM power cord requires a watertight pin and sleeve receptacle in the IEC 309 configuration (3-pole, 4-wire grounding). Interpoll Labs uses a HUBBELL part no. 4100R12W with a HUBBELL part no. BB1001W enclosure. These connectors are rated for 100 Amps at 125/250 VAC.**
- **The receptacle must be located within 20 ft. of the location where the trailer will be sited.**
- **Delta to delta type transformers will not be acceptable.**

Purchaser is responsible for providing proper electrical supply and is liable for any damages which results from incorrect voltages and/or currents.

4.4 Operational Data

In order to satisfy pollution control regulations, combustor operational data must be obtained and provided to the Interpoll Labs Field Engineer at the end of the test.

4.5 Agency Notification

In the event the Purchaser intends to submit the results of this test to a state or federal agency to establish compliance with air pollution regulations, the Purchaser will notify the appropriate agency sufficiently in advance so that the agency can witness the test if it so desires.

4.6 Safety

Interpoll Labs is dedicated to the protection of its employees from on the job injuries. All personnel from Interpoll Labs have the responsibility to work safely on the job.

4.6.1 Safety Orientation

The Client shall orientate Interpoll Labs personnel on general and site-specific hazard communication, emergency action, access control and Client safety polices.

4.6.2 Safety Standards Compliance

Construction methods and practices shall specifically conform to requirements of all federal rules and regulations pertaining to the Occupational Safety and Health Act, 29 CFR Part 1910 and the Safety and Health Regulations for Construction, 29 CFR Part 1926. The Client shall also comply with any related state rules and regulations.

4.6.3 Hazards

The Client is responsible for inspecting the job site to determine what hazards may exist or arise during testing. Inspections include, but are not limited to, unguarded work areas, scaffolding, ladders, safety climbs, guardrail systems, safety net systems, covers, controlled access zones, walking/working surfaces, man lifts, high pressure points, high temperatures (ambient and gas stream), ventilation, lighting, and emergency shower/eyewash stations.

Before testing begins, Interpoll Labs personnel will determine if all requirements are met to support employee safety.

5 DELIVERY

The services described in this proposal are tentatively scheduled for the week of September 13, 2021. Test dates are issued on a first-come first-serve basis. Test dates will be confirmed after receipt of a purchase order for the services in this proposal and finalized after written or faxed receipt accepting the commonly agreed upon test dates.

6 PRICE

6.1 Standard Services

The total fixed price for the services as described in Section 2.1 of this proposal is Thirty Thousand Dollars ($30,000).

6.2 Optional Services

6.2.1 Fuel Analysis
Short Proximate Analysis

The additional price to perform the analysis as described in Section 2.2.1a is Sixty Dollars per sample ($60/sample).

6.2.2 ERT Reporting

Additional price to perform the ERT Data entry described in Section 2.2.2a is Eighty Five Dollars per hour ($85/hr).

6.3 Billing Terms

If the Purchaser has an established account with Interpoll Laboratories, billing terms are 100% of the total price net thirty (30) days from the last day of on-site sampling provided that the total price does not exceed the Purchaser's approved credit limit. If the total price exceeds the Purchaser's approved credit limit, that portion which exceeds the Purchaser's approved credit limit must be remitted in the form of a certified check at least seven (7) days prior to the first scheduled day of on-site testing services.

If the Purchaser does not have an active account with Interpoll Laboratories, 25% of the full amount in the form of a certified check must be received prior to final scheduling. The remaining 75% must be remitted in the form of a certified check seven (7) days prior to the first scheduled test date.

Finance charges on past due accounts 30 days after the first billing is a fixed amount of 1½% per month on the unpaid balance which is an 18% annual percentage.

7 TERMS AND CONDITIONS

7.1 Controlling Conditions

Any order given in response to this proposal shall be subject to acceptance by Interpoll Laboratories and to all of the terms and conditions as listed herein. Any provisions or conditions incorporated in the Client's order which are in any way in conflict or in addition to these terms shall not be binding on Interpoll Laboratories unless expressly agreed to in writing by Interpoll Laboratories.

7.2 Price

Prices set forth in this proposal shall be in effect for a period of 90 days. For any order received 90 days or more after the date of this quotation, prices shall be according to the current fee schedule in effect on the date of such order. Prices are subject to change without notice. Prices do not include federal, state or local taxes applicable to services provided. Such taxes shall be added to the price where Interpoll Laboratories has an obligation to collect the same.

7.3 Payment

All costs and expenses, including attorney's fees, incurred by Interpoll Laboratories in the collection of the payments will be borne by the Client if payment is not made in accordance with the terms hereof. Interpoll Laboratories reserves the right to cease all work hereunder in the event Client does not timely pay its invoices or if, in Interpoll Laboratories' opinion, Client's financial condition or other circumstances do not warrant the continuing performance of services on the above terms.

7.4 Additional Charges

(a) In the event that difficulties are encountered by the plant or process under test which result in delay(s) of over 60 minutes total in the testing activities or necessitate that one of the test runs be repeated, an additional charge of Ninety Dollars per hour per man ($90/HR/MAN) may be invoked. Should such delays require the test team to spend another night and day or any portion thereof at the test site to complete the herein proposed work, the total additional cost for the extra day is Nine Hundred and Fifty Dollars per day per man ($950/DAY/MAN).

(b) When a testing date is agreed upon, Interpoll Laboratories reserves the test date and allocates personnel and equipment to complete the scheduled job to the exclusion of others. For this reason, a postponement charge will be assessed if the testing must be re-scheduled. The postponement fee will be based upon the table shown below:

Proposal Price		**Postponement Charges** (Business days prior to scheduled mobilization date)			
		0 business days*	< 10 business days	< 15business days	< 20 business days
less than	$ 24,999	25%	25%	0%	0%
$ 25,000	$ 49,999	40%	30%	25%	0%
$ 50,000	greater than	50%	40%	30%	25%

* If the project is postponed on the day of, or after, mobilization, travel expenses and travel labor at the above quoted rates will be assessed in addition to the postponement charge.

(c) If these services are performed after September 30, 2017, an additional charge of 0.6% per month will be added for each month thereafter until the time the tests are performed to cover the cost of inflation.

7.5 Restricted Information

(a) Interpoll Laboratories and Client agree that for a period one year from the completion of the services provided hereunder, not to disclose confidential information to any third party without the other party's written consent. For purposes of this Agreement, confidential information shall mean (i) proprietary information of Client or Interpoll Laboratories disclosed in writing to the other party and conspicuously marked "confidential", or (ii) information that Client or Interpoll Laboratories discloses verbally to the other party which Client or Interpoll Laboratories designates at the time of such disclosure as "confidential" and which is summarized in a written memorandum conspicuously marked "confidential" that is delivered to the other party within ten (10) days following such verbal disclosure.

(b) Interpoll Laboratories' and Client's obligation of confidentiality shall not apply to (i) any information which is already public knowledge, (ii) any information that was in the possession of Interpoll Laboratories or Client prior to the effective date of this Agreement, (iii) any information which after disclosure or development for Client becomes part of the public domain through no fault of Interpoll Laboratories or (iv) any information that is received by Interpoll Laboratories from a third party who did not acquire it under an obligation of confidence, directly or indirectly, from Client.

7.6 Quality Control

All services shall be performed in accordance with specifications and with Interpoll Laboratories' Quality Assurance/Quality Control Plan ("QA/QC Plan") in effect at the time the services are performed. Interpoll Laboratories reserves the right to deviate from standard methodologies where this, in Interpoll Laboratories' judgment, is advisable unless otherwise directed by the Client.

7.7 Warranties

Interpoll Laboratories represents that its services shall be performed in a manner consistent with that level of care and skill ordinarily exercised by other professionals in the same locality providing like services under similar circumstances. NO OTHER WARRANTY TO CLIENT, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND NO WARRANTY OF RESULTS IS INCLUDED OR INTENDED IN THIS AGREEMENT, OR IN ANY REPORT, OPINION, OR DOCUMENT PREPARED BY INTERPOLL LABORATORIES IN CONNECTION HEREWITH OR OTHERWISE.

7.8 Limitation of Liability and Indemnification

Client acknowledges and agrees that acceptance and use of, or reliance on, the testing products or services, testing reports or consulting services provided by Interpoll Laboratories shall be at Client's sole risk. The legal liability of Interpoll Laboratories on any claim of any kind (including without limitation negligence or breach contract) for any loss, damage or injury arising out of, connected with, or resulting from this Agreement, or from the performance or breach thereof, or from the use or loss of use or reliance upon any testing products or services, testing reports or consulting services furnished by Interpoll Laboratories shall in no event exceed the amount paid by Client to Interpoll Laboratories under the terms and conditions of this Agreement. In no event, shall Interpoll Laboratories be liable for any special, indirect, incidental or consequential damages (including without limitation, loss of product, profits or revenues, damage or loss from operation or non-operation of plant or interruption of business, claims of any customers of Client, or fines, penalties or assessments of any governmental or quasi-governmental authority or agency), whether a claim for such damage is based upon warranty, contract, negligence, tort, strict liability or otherwise. Any claim which may be made by Client against Interpoll Laboratories must be commenced within one (1) year from the completion of the testing project(s) which is the subject of this Agreement. Client agrees to indemnify, defend and hold harmless Interpoll Laboratories, its officers, directors, employees, agents and subcontractors from and against all losses, damages, claims and related expenses (including, without limitation, reasonable attorney's fees and other professional fees and expenses of defending any claim) arising out of or in any way connected with this contract including all claims made pursuant to any federal, state or local law arising from the release, threatened release, discharge, storage, transportation or disposal of hazardous substances, pollutants or contaminants.

7.9 Force Majeure

Interpoll Laboratories shall not be responsible for damages or delays in performance caused by but not limited to, unusual weather conditions, fires, floods, epidemics, war, riots, strikes, lockouts, governmental action or failure to act, industrial disturbances, unanticipated site conditions, inability with reasonable diligence to supply personnel, equipment, or material to the project, delays or damage during shipment or any other condition beyond Interpoll Laboratories' control. Any such delays shall in no event excuse Client from paying amounts owed for services performed prior to the occurrence of the delay.

7.10 Regulatory Communication

Except as required by law, all contracts with federal, state, and/or local regulatory agencies or authorities having jurisdiction concerning the services performed hereunder is the exclusive responsibility of the Client.

7.11 Permits

Client shall, at its expense, be responsible for obtaining all necessary permits and approvals relating to the services to be provided hereunder.

7.12 Waiver

No waiver of any provision of these Terms and Conditions or of any obligation of the Client hereunder shall constitute any future waiver of such provision or a waiver of any future obligation of the Client.

7.13 Section Headings

Section headings herein are solely for convenience and shall have no legal significance.

7.14 Severability

The invalidity or unenforceability of any provision or term hereof shall not affect in any the remainder of the provisions or terms of this Contract.

7.15 Survival of Terms

All liabilities and obligations of Client to Interpoll Laboratories, including but not limited to those contained in Sections 3 and 4 hereof, existing at the time of the termination or expiration of the Agreement shall remain in effect until satisfied in full. Section 8 hereof also shall survive termination or expiration of the contractual arrangement.

7.16 Governing Law

The validity, construction and performance of these terms and conditions and any service provided hereunder shall be governed by the internal laws (and not the laws of conflicts) of the State of Minnesota. Any legal action shall be venued in Anoka County, State of Minnesota.

7.17 Independent Contractor

Interpoll Laboratories' services are performed as an independent contractor and not as the Client's employee, agent, partner or joint venture.

7.18 Modifications of Terms and Conditions

No addition to or modification of any of the provisions of this proposal shall be binding upon Interpoll Laboratories unless made in writing and signed by a duly authorized representative of Interpoll Laboratories.

7.19 Purchase Order and Acknowledgement Forms

For convenience of administration, Client may use its usual order and acknowledgement forms but such forms shall only be effective for the purpose of verifying the services to be provided by Interpoll Laboratories. All other terms and conditions in Client's purchase orders or confirmations shall be subject to and shall not modify the provisions of this agreement.

Respectfully submitted,

INTERPOLL LABORATORIES, INC

_____

Ed Juers
Source Testing Department

EJ/ehj

The undersigned is an authorized representative of the Hibbing Public Utilities and authorizes Interpoll Laboratories, Inc. to proceed in accordance with the terms and conditions of this proposal.

_____

Date

_____

Authorized Signature

_____

Title

Client:	**Hibbing P.U.**				
City/State:	**Hibbing, MN**				
Scheduled Test Date:	**Week of September 13, 2021**				
Proposal Number:	**11442**				
Work Scope					
Source Code	**Method Description**	**Method(s)**	**Runs**	**Notes**	**Price**
EQUI7/SV004 Boiler 4 CEM	O2/NOx/CO RATA	3A/7E/10/PS2	9	Certification requuirements?	$ 3,725.00
EQUI7/SV004 Boiler 4 (Wood Fired)	PM/Hg/HCl/Ammonia	5/202, 30B, 26A,	3	PM 2DSCM/HCl 1DSCM	$ 16,250.00
Boiler 2 (Natural Gas Fired)	Nox	7E	3	Verify Emission Factor	$ 3,450.00
Boiler 2 (Natural Gas Fired)	PM/PM10	5/202	3	Section 3.3 of Permit?	$ 4,225.00
		Mobilizations (2 person Team)	1	$ 2,350.00	$ 2,350.00
				Total	$ 30,000.00
Notes:					
Boiler 4-If new analyzers are being installed, certification requirements may apply.					
Boiler 4-30-day Nox Performance test on Unit 4 Wood Boiler is performed using CEMs. Interpoll has not been involved in that test in the past.					
Boiler 2-Unsure whether the NOxEmission facotr test needs to be performed. It is not in the permit, but has been performed in the past at some points.					
Boiler 2-Unsure whether PM/PM10 testing needs to be performed. There is a brief note in Table 7 of section 3.3 refering to test date (September 10, 2021), but, PM/PM10 testing is technically not required when burning Natural Gas per the permit.					

Hibbing Public Utilities

HIBBING PUBLIC UTILITIES COMMISSION

1902 SIXTH AVENUE EAST
P.O. BOX 249
HIBBING, MINNESOTA 55746-0249

TELEPHONE 218-262-7700
FAX 218-262-7702

Item 6.B.

August 23, 2021

Patrick Garrity
Commission Chairperson
1902 E. 6th Ave.
Hibbing, MN 55746

Re: Cooling Tower Fire Protection Systems

Dear Commissioners,

As part of the cooling tower project and to maintain compliance with our insurance policy, a fire protection sprinkler system is required. Please find attached quote from Electric Scientific Company in the amount of $155,590 to construct the two cooling towers, which will be required by HPU's Insurance Company, FM Global. If approved by the Commission, Electric Scientific would construct the fire suppression system per FM Global's approved design with drawings and configurations in process per a separate design and approval scope for $11,360, which I have approved to expedite FM Global's review to meet our October completion schedule.

For your information, FM Global Loss Prevention Data Sheet is attached for your reference.

Thank you for your consideration in this matter. I will be available at the regular meeting of August 24, 2021 for further discussion.

Sincerely,

HIBBING PUBLIC UTILITIES COMMISSION

Luke J. Peterson

Luke J. Peterson,
General Manager

LJP/plr
Attachments
cc: Commission
A. Borland
File: commission/08 24 2021 Cooling Tower Fire Suppression System.doc

ELECTRIC SCIENTIFIC COMPANY
Fire Protection Systems www.electricscientific.com

Main Office: 7505 Highway 7	Minneapolis, MN 55426	952-933-4671
Northern Office: 4183 Thunderchief Lane	Duluth, MN 55811	218-729-7330
ND Office: 4229 Centurion Drive Suite 6	Bismarck, ND 58504	701 223-3099

August 18, 2021

Luke Peterson
Hibbing Public Utilities
Hibbing, MN 55746

COOLING TOWER FIRE PROTECTION SYSTEMS
Two Deluge Systems for Two Towers

Electric Scientific Company proposes to provide the equipment, mechanical installation, checkout, testing and training for two new deluge sprinkler systems for the two new Cooling Towers (each tower is two cells) as outlined in this proposal.

The proposed Cooling Towers (by others) are counterflow in design and made up of fiberglass construction. Each of the two cooling towers have two cells (one cell is 36'x24' in area) so the total area of one cooling tower is 36'x48'. Each Cooling Tower is provided with a new deluge sprinkler system. These deluge systems were designed in a different proposal (S21028) per FM Global requirements and to be within the expectations of the cooling tower provider.

The sprinkler system water is by tapping into the plant's 6" city water supply that is located in the basement, installing a backflow preventer, then supplying the two new deluge zones. It is assumed this water supply meets the needs of the fire system. All piping supplied is schedule 40 steel pipe, with the deluge zones being galvanized pipe with stainless steel mounting hardware. All deluge valving will be monitored by the fire control system. The two new deluge systems will have a mechanical manual lever to activate the respective deluge system at the deluge valve.

This proposal is based on expanding the electrical fire detection from the plant's existing Fenwal fire control system, which then supplies all fire system statuses to the Control Room. The proposed cooling tower detection is LHD (linear heat detection) with one LHD zone supplied per cooling tower cell (four cells total) to give the owner more specific fire location information. Manual pull stations (with signage) are provided in the Control Room to allow the Operator to discharge either of the cooling tower deluge systems if desired. A hornstrobe will be located by the deluge valves, and operate if water is flowing from this location (for the owner's information).

This proposal does include the subcontract of Viking Sprinkler for the fire water / sprinkler side of the system, and the owner taking responsibility for the electrical installation.

See the exclusions and clarifications on page 2 of this proposal.

August 19, 2021

Luke Peterson - HPU

RE: Fire Protection System Proposal S21027-B
Cooling Towers – Two Deluge Sprinkler Systems

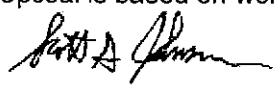
A general list of what is provided in this proposal:

1	Power supply with battery backup and supervisory to be added to JB6
14	Input modules (for monitoring the various fire system devices)
1200	LHD Footage – Linear Heat Detection (for the four cooling tower cells)
Lot	4 test boxes for LHD with terminals, engraved box signs
2	Manual pull stations (for the Control Room) – each with engraved signage
2	Release modules and hardware for the deluge valve monitoring and trip
1	Hornstrobe WP notification device by the valves, module to control them
2	Custom JB enclosures – to house fire system equipment, terminals, signage
Lot	Sprinkler system labor and materials to provide the two new deluge systems • Pipe is galvanized schedule 40, valves and trim, SS fasteners
Lot	Electrical technician time for programming, checkout, testing and training

BASE PROPOSAL COST ---------- $ 155,590

Exclusions and Clarifications of this proposal:

- The design, drawings and submittal are under a different proposal sent today (S21028).
- The owner is providing all labor and materials for the electrical installation of this system. This would include the conduit, wire/cable, boxes, fittings, mounting hardware.
- New conduit is to be RGS (rigid galvanized steel) and seal-tight for flexible conduit needs in the plant. RGS / PVC for the outside of the cooling tower, sealtight for inside the tower.
- The sprinkler piping supplied will be schedule 40 galvanized steel-pipe
- This proposal does include one man-lift, OSHA planks for cooling tower work, and fall protection tie-offs, and other PPE requirements of this job
- Not provided is any shut down interface – this can be added if desired. It is recommended that the owner talk to FM Global for their shut down requirements (manual or automatic).
- Provided ES gets started on this project soon, ES would work closely with the Cooling Tower provider regarding scheduling to meet the owner's needs.
- This proposal provides the core drilling of holes to penetrate the tunnel roof for exiting, but the owner is to provide any required sealing of these openings after the pipe installation.
- This proposal requires tapping into HPU's existing city water 6" main, the owner needs to provide any assistance to allow this work, and any pipe insulation is not provided.
- This proposal is based on using an existing 1" RGS conduit that runs from tunnel (by the stairs) to the plant, and the owner needs to remove the electrical box that this conduit goes to and pull out the wiring in the conduit to make it available for our use.
- This proposal does not include painting, patching, or lead paint or asbestos abatement
- This proposal is based on working normal business hours and work in 2021.

Proposal By: 

Scott A. Johnson
Electric Scientific Company

COOLING TOWERS

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1.0 SCOPE

This data sheet describes the types, hazards, protection, and maintenance of cooling towers. Key hazards impacting the loss potential for cooling towers include: wind, fire, collapse and hail. A cooling tower is a heat removal device that uses water to transfer process waste heat into the atmosphere. All cooling towers operate on the principle of removing heat from water by evaporating a small portion of water that is recirculated through the unit. It also includes information on FM Approved (see Appendix A for definition) cooling towers that fall into one of the following categories:

A. Cooling towers of limited combustibility (fire does not continue to self-propagate, in cooling tower components, beyond the area of exposure) according to Acceptance Criteria found in FM 4930, Approval Standard for Cooling Towers. This type usually incorporates either fire retardant (FR) fill and other components in a noncombustible shell, or noncombustible fill within a FR fiberglass-reinforced plastic shell. These could include either single-cell or multi-cell cooling towers. Cooling towers of limited combustibility due to their design do not require additional capacity or redundancy.

B. Single-cell cooling towers where the fire spread through testing is shown to be limited to only a portion of the given cell according to Acceptance Criteria found in FM 4930.

C. Multi-cell cooling towers according to Acceptance Criteria found in FM 4930 with additional capacity so that, under worst-case fire conditions, a fire may burn out one cell, but be limited to that cell and not affect adjacent cells. With this type of cooling tower design, at least one additional cell is always provided so that extra capacity and reliability will always be available.

Small windborne debris damage to cooling towers is not covered in this document. Where such damage has occurred it has not hindered the operation of the cooling tower.

Protect air-cooled heat exchangers (air-fin or fin-fan units) handling ignitable liquids per Data Sheet 7-14, *Fire Protection for Chemical Plants*.

1.1 Hazard

Refer to *Understanding the Hazard: Fire in Cooling Towers*, FM Global publication P0044. For additional information on fire and other perils, refer to Section 3.4.

1.2 Changes

April 2020. This document has been completely revised. Significant changes include the following:

A. Clarified the scope of the document.

B. Added detailed information on FM Approval testing process for multi-cell cooling towers.

C. Added emphasis on wind and collapse exposures.

D. Added information on contingency planning

2.0 LOSS PREVENTION RECOMMENDATIONS

2.1 Construction and Location

2.1.1 Materials for Construction

2.1.1.1 Provide FM Approved or noncombustible cooling towers.

2.1.1.2 Where combustible cooling tower components are present provide sprinkler protection. Avoid the use of combustible louvers, even on protected cooling towers, because they are not usually covered by the fire protection system and could be ignited by an exterior exposure fire. Do not use polystyrene "eggcrate" fill, even if sprinkler protection is provided.

2.1.2 Protection Against Fire Exposure

2.1.2.1 Locate unprotected cooling towers of combustible construction, or that contain combustible fill, at least 20 ft (6 m) from each other and from the following:

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A. Structures or processes that emit sparks or flying brands under normal operations (such as chimneys, incinerators, flare stacks, or cob burners).

B. Material and processes of severe fire hazard (such as petroleum processing and storage tanks, explosives manufacturing or storage, or pipelines and pumping stations for petroleum products).

2.1.2.2 When 20 ft (6 m) spacing is not provided, either install sprinkler protection in the cooling towers, or provide fire partitions of at least one-hour fire resistance between cooling towers and structures. Construct the partitions to be at least 3 ft (1 m) higher than the top of the body of the cooling tower and to extend at least 3 ft (1 m) beyond the end walls of the cooling towers. Protect all exposed openings of the cooling tower with 1/4 in. (6.4 mm) corrosion-proof wire mesh to stop burning embers from entering.

2.1.2.3 If cooling towers must be located near incinerators or stacks, use cooling towers or shells that are noncombustible, and protect openings with 1/4 in. (6.4 mm) corrosion-proof wire mesh. Ensure the net area of openings in the wire mesh are sufficiently large that fan efficiency will not be reduced.

2.1.2.4 When an unprotected cooling tower is located on the roof of a building of combustible construction, use noncombustible construction or an FM Approved cooling tower suitable for the location.

2.1.3 Wind Design

2.1.3.1 Provide protection against wind forces in accordance with Data Sheet 1-28, *Wind Design*. These designs encompass all ground mounted and roof mounted cooling towers. Base wind design for hyperbolic (large outdoor structures) on detailed wind tunnel testing results and appropriate design guidance from that testing taking into consideration the effects of terrain and adjacent structures.

2.1.4 Earthquake Design

2.1.4.1 Provide earthquake design in accordance with Data Sheet 1-2, *Earthquakes*, and the following recommendations:

A. Provide all sprinkler piping in active seismic areas with earthquake protection as specified in Data Sheet 2-8, *Earthquake Protection for Water-Based Fire Protection Systems*.

B. In those areas designated by FM Global as active seismic areas (see Data Sheet 1-2), design must meet, at a minimum, the recommendations of the International Building Code or local country building code. Provide design by a professional structural engineer registered to practice in the jurisdiction.

C. When a cooling tower is placed on a building 120 ft (36.6 m) or higher, tie "splash bar" or slat-type fill with wire to the supporting grids at one end.

D. When a cooling tower is added to an existing building, check the earthquake bracing system of the building to ensure it is still adequate.

2.2 Protection

2.2.1 Sprinkler Protection

Where sprinkler protection is required below, utilize a sprinkler with a K-factor of 8.0 (115) and a minimum design end-head pressure of 7 psi (50 kPa). This would be for protecting all types and sizes of cooling towers, including the package-type cooling towers if protected.

2.2.1.1 Protect counterflow induced-draft cooling towers as follows:

A. For cooling towers with combustible fill and fan deck, install sprinkler protection under the fan deck, including the fan opening, designed to provide a minimum density of 0.5 (gpm)/ft^2 (20 mm/min), on a deluge system (Figure 1). Spot sprinklers may still be needed above the fan deck to protect individual combustible components, such as the fan-drive motor, fan cylinder, or exhaust stacks.

B. For cooling towers using a combustible fan deck, install sprinkler protection under the deck, designed to provide minimum density of 0.35 (gpm)/ft^2 (14 mm/min). A wet-pipe or dry-pipe system will be satisfactory.

C. For cooling towers with metal or cementitious fill and a combustible fan deck, install sprinkler protection under the deck designed to provide a minimum density of 0.15 (gpm)/ft^2 (6 mm/min). A wet-pipe or dry-pipe system will be satisfactory.

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2.2.1.2 Protect crossflow cooling towers with open distribution basins (Figure 2), combustible fan deck and fill as follows:

A. Install sprinklers under the fan deck designed on a deluge system to provide a minimum density of 0.35 (gpm)/ft^2 (14 mm/min).

B. Because there is not enough space between the open distribution basin and the fill for conventional sprinklers, use FM Approved open water spray nozzles. Locate the nozzles below the distribution basin and above the distribution deck on either the air inlet louver or drift eliminator side, discharging horizontally (Figures 2 and 3). Determine minimum flowing pressure of a nozzle by the maximum width or length of fill.

When acceptable coverage cannot be obtained from one side of the fill, provide nozzles on both sides (Figure 3), with minimum pressure based on one-half the width or length of fill, using a deluge system (Note: A recommended density cannot be given because nozzle pressure is dependent on type of nozzle and width or length of fill. Also, nozzle spacing depends on the framing of the basin.)

Remove the sealing assembly from each nozzle. Some makes of nozzles have to be installed at an angle from the horizontal as recommended by the manufacturer.

When the distribution deck is omitted, provide a horizontal space for sprinklers below the hot water basin by omitting or removing fill. Use a deluge system to provide a minimum density of 0.5 (gpm)/ft^2 (20 mm/min), and minimum end-head pressure of 25 psi (170 kPa). Use pendent sprinklers, and maintain a minimum of 12 in. (0.3 m) above the top of the fill to the sprinkler deflectors. When a 12 in. (0.3 m) clearance cannot be provided, use the FM Approved cooling tower nozzle arrangement.

C. In crossflow cooling towers with closed distribution basins, protect the combustible fill (Fig. 4) by supplying fire protection water to the hot water basin and utilizing the normal distribution system of the cooling tower (target nozzles or slatted distribution deck). Install fire protection water to the basin on a deluge system arranged to provide a minimum density of 0.5 (gpm)/ft^2 (20 mm/min). Use wide-angle nozzles (180° water spray) in the space between the extension of the fan deck and the hot water basin. Where the fan deck extension is noncombustible, ensure the wide-angle nozzles discharge the full minimum density of 0.5 (gpm)/ft^2 (20 mm/min). Where the fan deck extension is combustible, provide additional nozzles on the underside of the fan deck extension to provide a minimum density of 0.1 (gpm)/ft^2 (4 mm/min). Design the wide-angle nozzles to supply a minimum density of 0.4 (gpm)/ft^2 (16 mm/min).

To clarify, two layers of protection for a combustible fan deck extension are required. Protection is needed directly beneath the fan deck extension, and then additional protection beneath this to protect the combustible fill in a non-FM Approved cooling tower.

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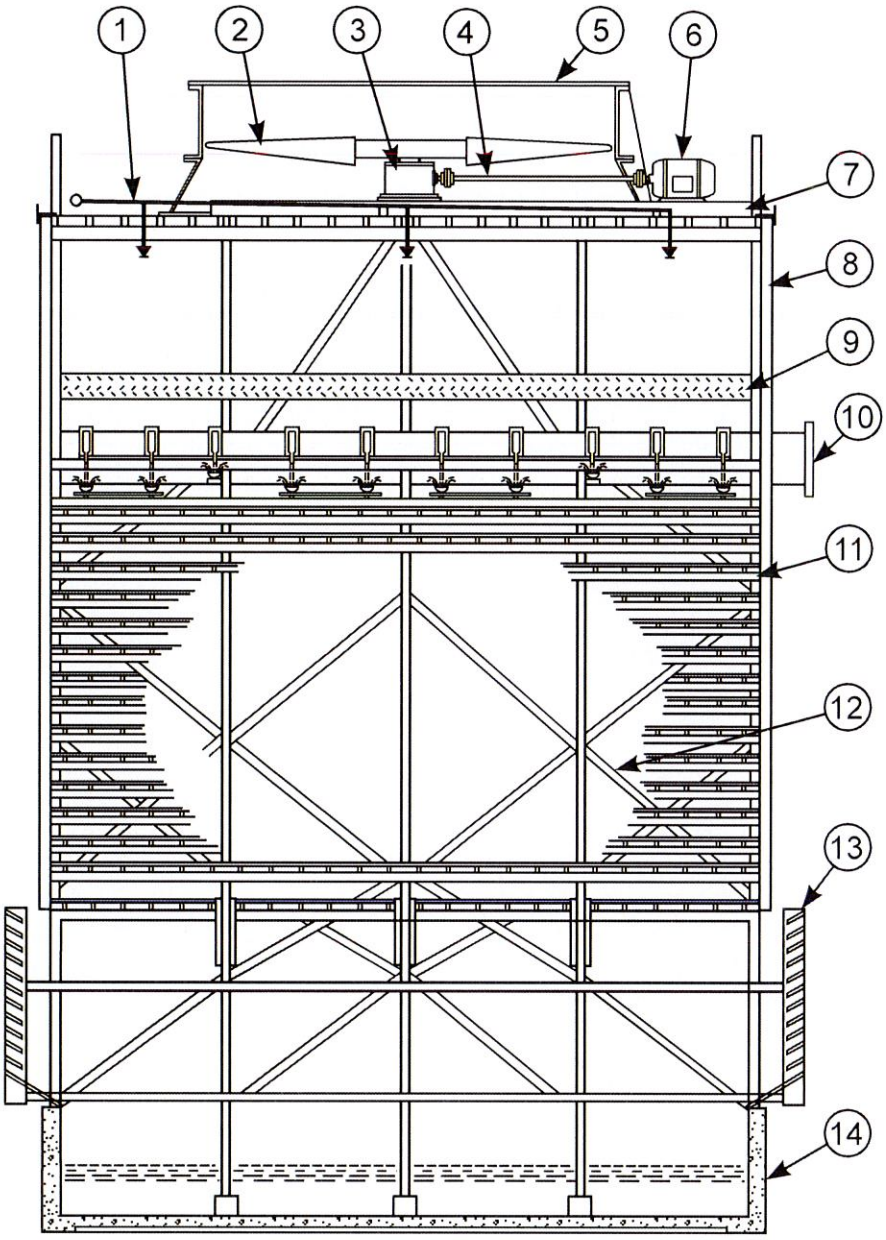

1. Sprinkler Piping
2. Fan
3. Speed Reducer
4. Drive Shaft
5. Fan Cylinder
6. Drive Motor
7. Fan Deck
8. Shell
9. Drift Eliminators
10. Water-Inlet Pipe
11. Combustible Fill
12. Framing
13. Air-Inlet Louvers
14. Water Basin

Fig. 1. Typical cross section of a counterflow induced-draft cooling tower

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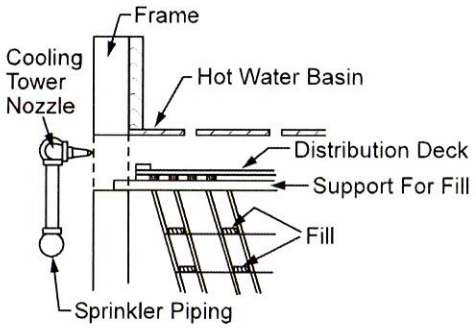

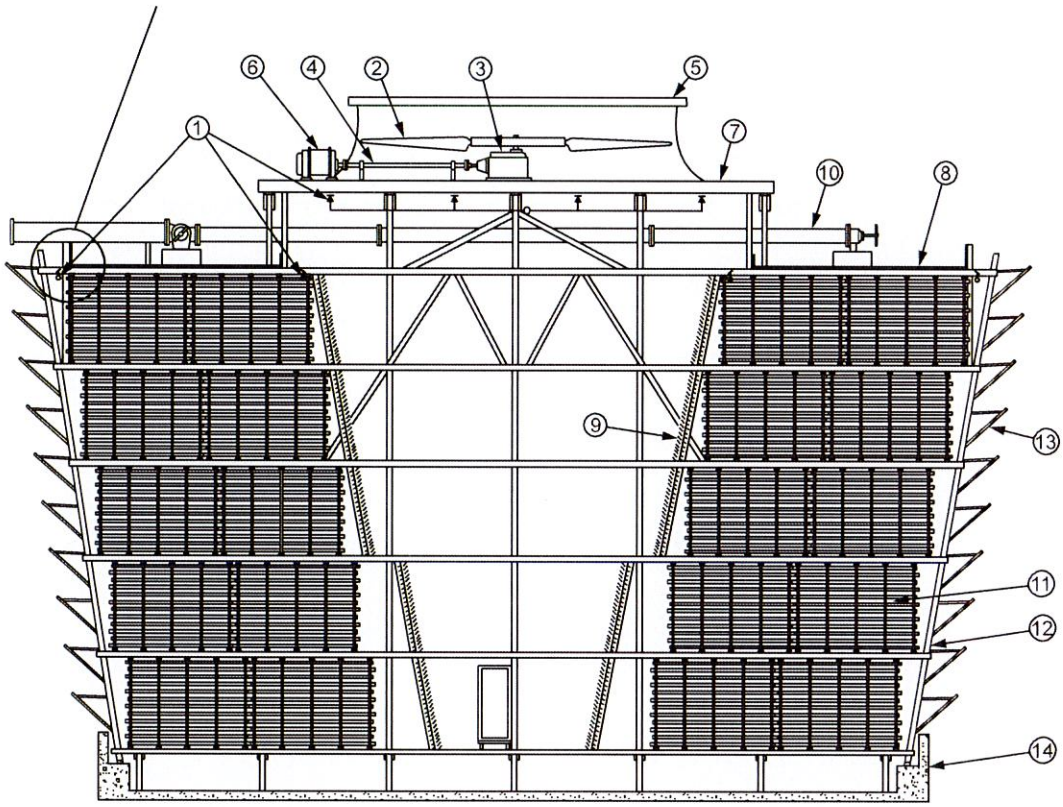

1. Sprinkler Piping
2. Fan
3. Speed Reducer
4. Drive Shaft
5. Fan Cylinder
6. Drive Motor
7. Fan Deck
8. Hot-Water Basin
9. Drift Eliminators
10. Water-Inlet Pipe
11. Combustible Fill
12. Framing
13. Air-Inlet Louvers
14. Water Basin

Fig. 2. Typical cross section of a crossflow induced-draft cooling tower (open hot water basin)

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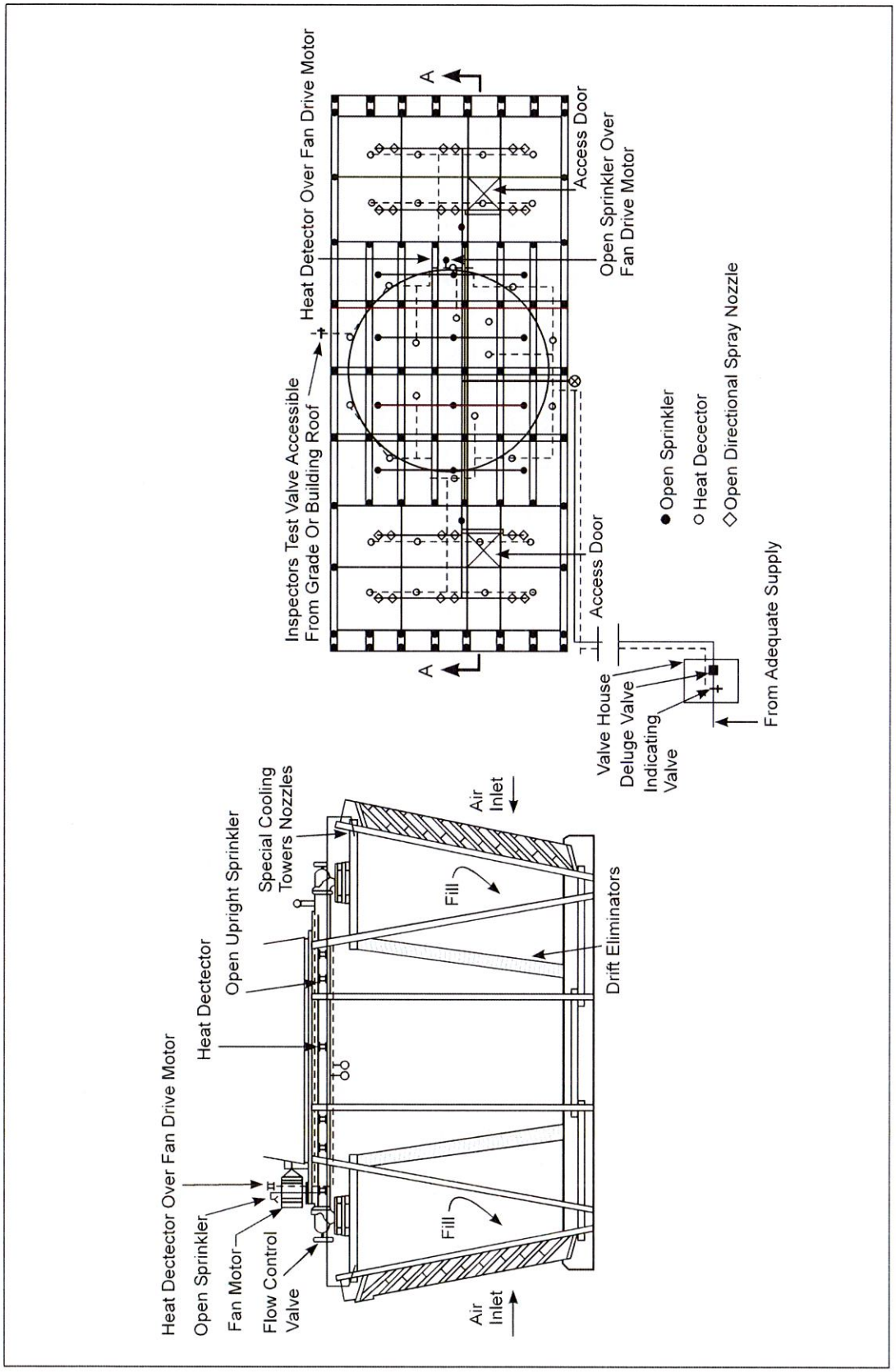

Fig. 3. Typical deluge fire protection arrangement for crossflow cooling towers

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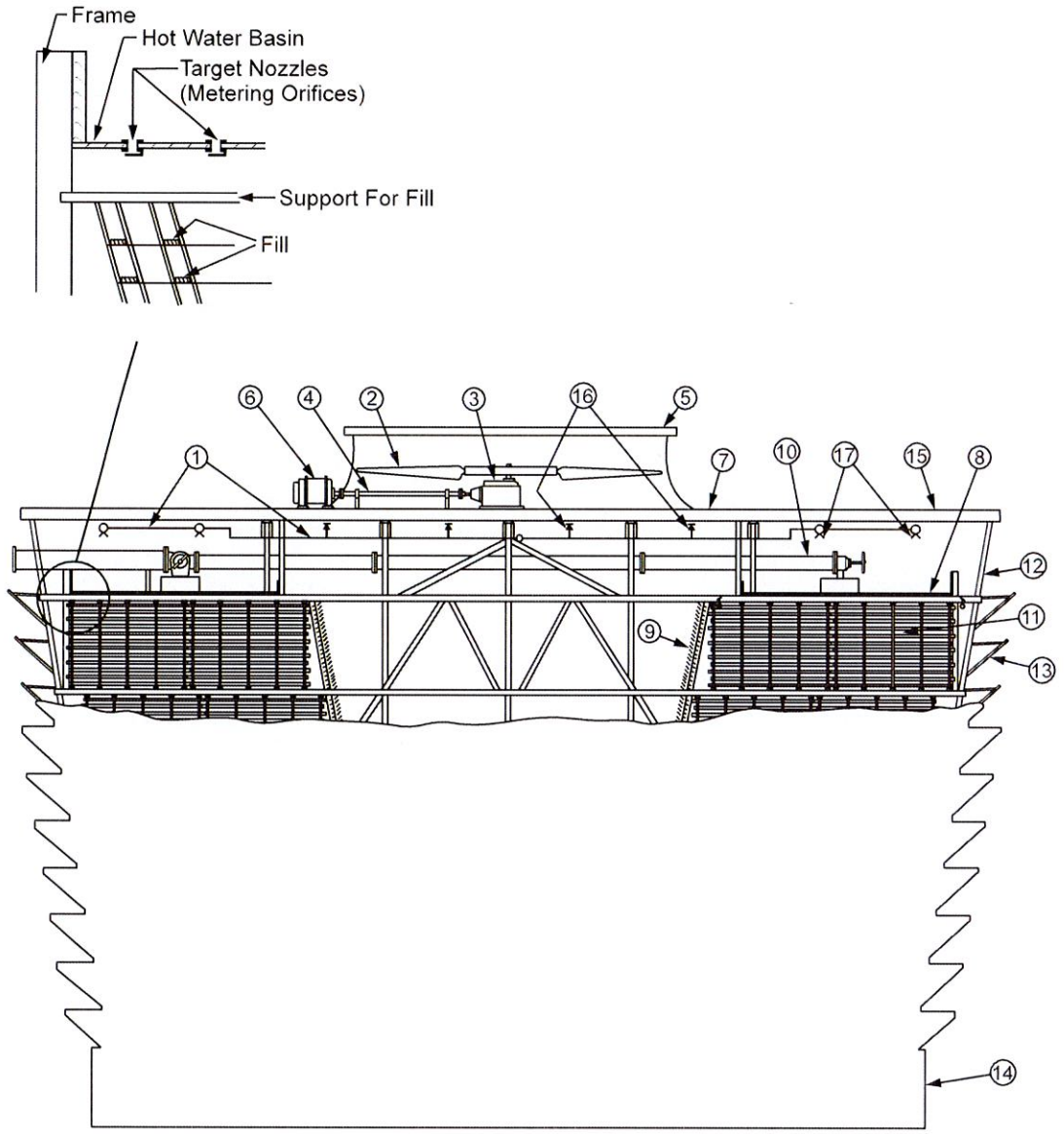

Fig. 4. Typical cross section of a crossflow induced-draft cooling tower (covered hot water basin)

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D. Where geometry permits, use upright sprinklers in the space between the extension of the fan deck and the distribution basin. Consider the depth and spacing of joists and beams for all installations to ensure compliance with clearance recommendations.

E. Where the fill is non-combustible, a wet- or dry-pipe system will be satisfactory for protection of the fan deck, with a minimum density of 0.2 (gpm)/ft^2 (8 mm/min).

2.2.1.3 When cooling towers have more than 37 ft (11.3 m) of fill height, a time lag of approximately three minutes occurs from activation of the sprinkler system before sprinkler water, discharged at the top of the fill, begins to wet the material at the bottom of the fill. If sprinkler protection is needed, provide one or more horizontal spaces in the fill stack to allow for installation of an intermediate level (or levels) of sprinklers. When the fill height exceeds 37 ft (11.3 m), provide one level of intermediate sprinklers for each intermediate 25 ft (7.6 m) of fill height. (For cooling towers less than 37 ft [11.3 m], nozzles at top only; 37-50 ft [11.3-15.2 m], nozzles at top and one layer of intermediate sprinklers; 50-75 ft [15.2-22.9 m], nozzles at top and two layers of intermediate sprinklers, etc.). Use pendent-type heads for the intermediate sprinklers with the sprinkler deflectors a minimum of 1 ft (0.3 m) above the top of the lower fill. Design the sprinkler protection on a deluge system hydraulically to provide a minimum density of 0.5 (gpm)/ft^2 (20 mm/min) at each level, with a minimum end-head pressure of 25 psi (170 kPa).

2.2.1.4 Where sprinkler protection is provided at a cooling tower, also provide one sprinkler over each fan-drive motor (Figures 3 and 5). Additionally, provide sprinklers over any fan blades, fan cylinders, exhaust stacks, etc., unless they are noncombustible. These spot sprinklers can be fed through a deluge system or closed head wet pipe sprinklers.

Do not provide sprinkler protection over combustible fan cylinders of an air cooled condenser as these are of different design than fan cylinders for a cooling tower. However, ensure there are no unprotected ignition sources beneath the air cooled condenser such as storage, trailers, transformers, and even cables running up concrete columns beneath these fans.

2.2.1.5 Where protection is to be provided for fill areas of cooling towers, place the protection in service before the fill is installed, to protect the fill during construction or retrofit.

2.2.1.6 Protect cooling towers having noncombustible fill and drift eliminators, but with combustible end walls and/or exhaust stacks, as follows:

A. Install open-head side-wall sprinklers 6 in. (15 cm) below the top and within 12 in. (30 cm) from the inside surfaces of each combustible wall. Use FM Approved 190°F (88°C) rated heat-sensitive cables to activate sprinklers. Space the sprinklers every 7 ft (2.13 m) and provide at least 20 (gpm) (75 l/min) per head. Arrange sprinklers to face the surface area to be protected.

B. If the stack is more than 15 ft (4.6 m) high, provide sprinkler protection in accordance with Data Sheet 7-78 Section 2.2, Industrial Exhaust Systems. Use FM Approved 190°F (88°C) rated heat-sensitive cables to activate the sprinkler system.

2.2.1.7 Even if the combustible fill is protected, the inside surfaces of combustible end walls still need protection. Typically, the arrangement of sprinkler protection for the fill will not reach the combustible end walls for effective protection so additional protection is generally needed.

2.2.1.8 Where sprinkler protection is provided within a cooling tower interlock the fan to shut down upon sprinkler discharge.

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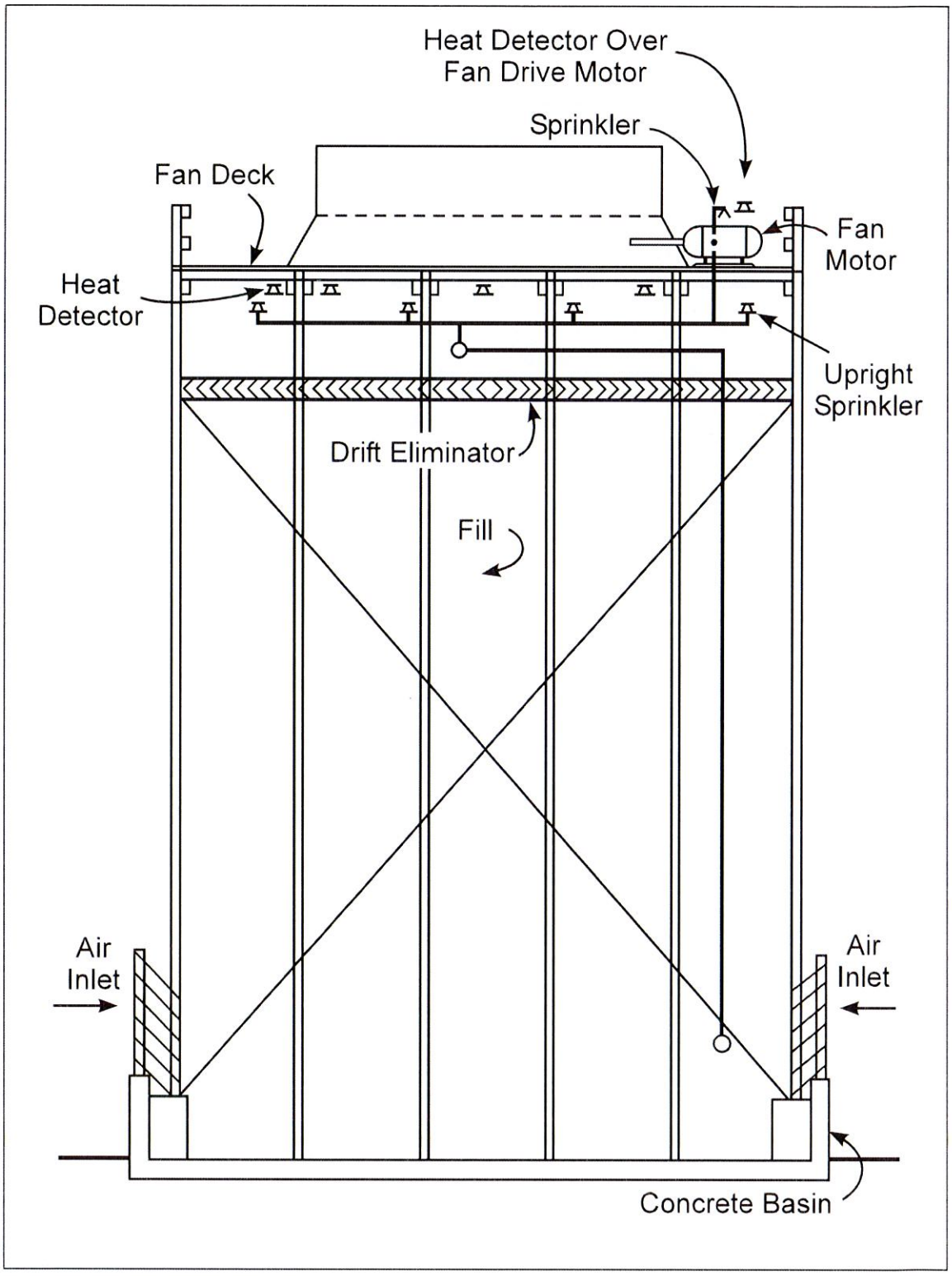

Fig. 5. Typical deluge or dry-pipe fire protection arrangement for counterflow cooling towers

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2.2.2 Water Supply

2.2.2.1 Provide an adequate water supply to simultaneously supply all discharge outlets in the two largest, adjacent sprinkler systems.

2.2.2.2 When there are two or more sprinkler systems and the water supply is only adequate to supply one system at a time, separate the sprinkler systems by one of the following methods providing a fire resistance of not less than 20 minutes:

A. Provide reinforced-concrete partitions between sections of the cooling tower individually protected by separate sprinkler systems.

B. Provide tight, continuous partitions of 1/2 in. (12.7 mm) thick cementitious board or other noncombustible material on both sides of wood or steel (stainless or galvanized) studs.

C. Provide tight, continuous partitions of 1/2 in. (12.7 mm) thick plywood on both sides of wood studs. Arrange the plywood so all joints are over studs, or use tongue-and-groove plywood.

D. Provide tight, continuous partitions of 3/4 in. (19 mm) thick nominal tongue-and-groove wood plank on both sides of wood studs. Use a type of wood that is resistant to rot.

E. Provide any other water-resistive partitions with a fire resistance of not less than twenty minutes.

F. Install partitions to extend from 1 ft (0.3 m) below the operating water level of the cold-water basin to the underside of the fan deck (counterflow cooling towers) or distribution basin (crossflow cooling towers). Where the fan deck covers the distribution basin (crossflow cooling towers), install heat barriers under the deck to separate sprinkler systems if their total demand exceeds the water supply. Extend heat barriers from the fan deck structure to the distribution deck dividers. Acceptable materials are 3/16 in. (4.8 mm) thick cementitious board or 3/8 in. (9.5 mm) plywood on one side of the wood studs. Arrange the heat barriers to be in line vertically with the partitions below. Have any openings in the partitions suitably sealed or caulked.

Other cooling tower designs may create additional problems. Study each cooling tower to ensure that (1) flame cannot spread from one sprinklered area to another before the sprinklers have controlled the fire, and (2) flow of hot gases will not open sprinklers in more than one system.

2.2.2.3 Include a minimum of 500 gal/min (1900 L/min) for hose streams in addition to sprinkler requirements in design of water supplies.

2.2.2.4 Provide an adequate water supply of at least 2-hour duration for sprinklers and hose streams.

2.2.3 Sprinklers and Piping

2.2.3.1 Use FM Approved, corrosion-resistant sprinklers where the atmosphere may be corrosive. Any FM Approved nozzle listed in the "Open Water-Spray Nozzles" category is acceptable.

2.2.3.2 Precautions are recommended if exposed to strongly corrosive process water.

2.2.3.3 If possible, locate piping on the cooling tower exterior. Nipple sprinklers through the fan deck (counterflow induced draft) or the fan deck extension (crossflow covered distribution basin).

2.2.3.4 Use piping, fittings, and hangers resistant to any expected corrosive atmosphere, or paint the piping. Also paint exposed threads of galvanized steel pipe.

2.2.3.5 Provide risers to sprinkler systems in cooling towers with four-way bracing at the top of the riser to protect for normal operating vibrations or water hammers. Also, provide a mechanical groove coupling within 2 ft (0.6 m) of the top of the riser.

2.2.4 Hydrants and Standpipes

2.2.4.1 Provide hydrant protection within 200 ft (61 m) of all parts of combustible cooling towers on the ground or on buildings less than 60 ft (18.3 m) high. Locate hydrants at least 40 ft (12 m) from cooling towers.

2.2.4.2 Provide standpipe protection on roofs within 200 ft (61 m) of all parts of combustible cooling towers located on buildings 60 ft (18.3 m) or higher. Preferably locate standpipes in stair towers, but if they must be in the open on roofs, locate them not less than 40 ft (12 m) from cooling towers. Make provisions to

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completely drain all exposed standpipe lines where subject to freezing. Provide hose equipment in a waterproof cabinet at each standpipe hose connection on a roof.

2.2.4.3 Provide stairways or ladders at convenient locations for accessibility to the cooling tower roof or top surface of the fill section of hyperbolic cooling towers.

2.2.5 Deluge System Actuating Devices

2.2.5.1 Where deluge systems are used, install an adequate number of heat detectors. Locate them in the path of natural air flow through the cooling tower. (Refer to Data Sheet 5-48, *Automatic Fire Detectors*.)

2.2.5.2 For crossflow mechanical-draft cooling towers, use either line-type heat detectors on the opposite face of the drift eliminators from the fill, or spot detectors located as in Recommendation 2.2.5.3. For crossflow natural-draft cooling towers, use line-type heat detectors. Run the wires from the top of the eliminators to within 4 ft (1.2 m) of the bottom of the eliminators, spaced not more than 15 ft (4.6 m) apart (Figure 6). Spot detectors will not be effective in crossflow natural-draft cooling towers.

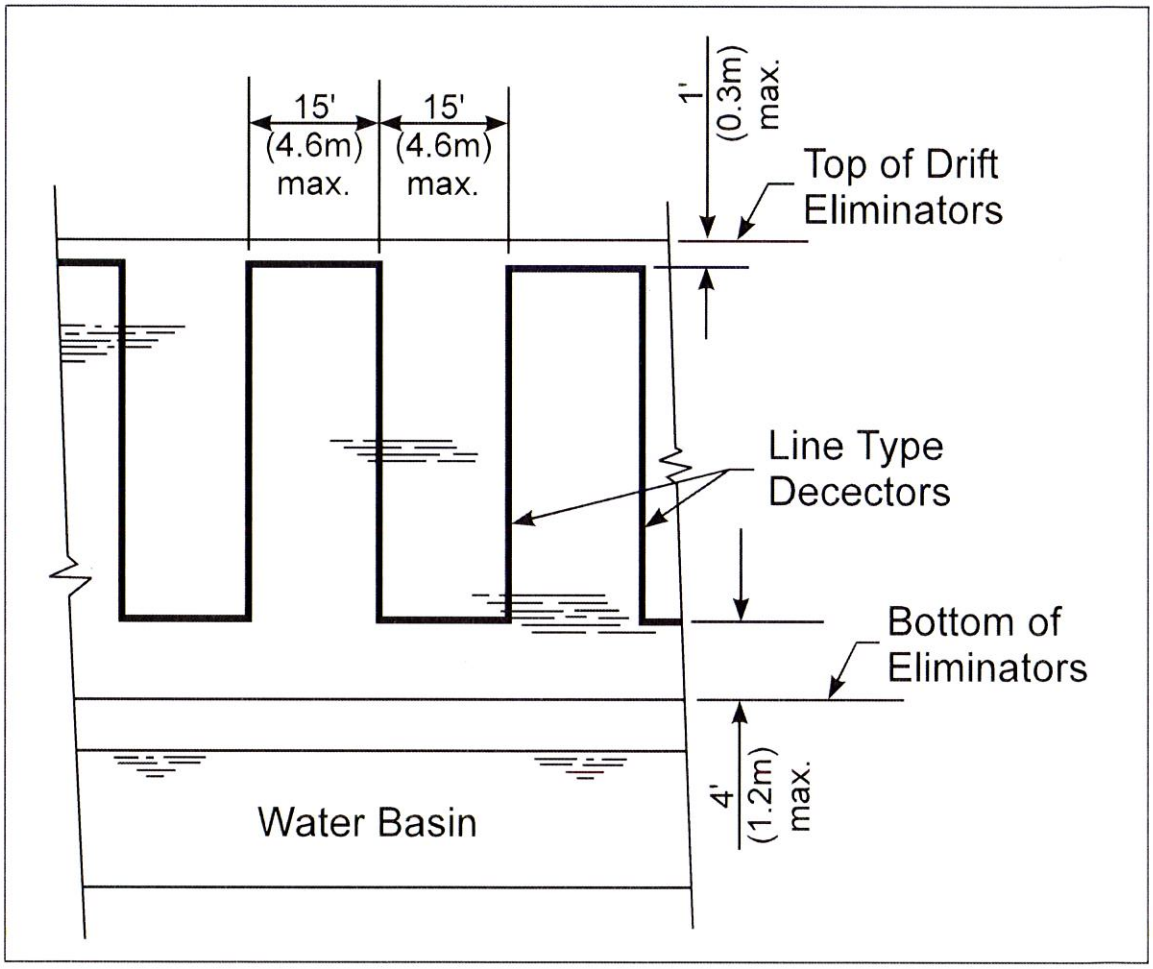

Fig. 6. Recommended arrangement of line-type detectors when used on the plenum side of drift eliminators in crossflow cooling towers

2.2.5.3 Where spot detectors are used in crossflow or counterflow cooling towers, locate them under the fan deck, around the circumference of the fan opening, and space them in accordance with the following:

A. Space rate-of-rise detectors not more than 15 ft (4.6 m) apart. In pneumatic-type detection systems, with detectors inside the cooling tower and using mercury checks, use no more than one detector per mercury check in cooling towers operating year round in cold climates. Use no more than two detectors per mercury check in cooling towers used during the warm months only, or year round in warm climates.

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Use no more than four detectors for each mercury check when the detectors are located outside the cooling tower.

B. Space fixed temperature detectors not more than 8 ft (2.4 m) apart in any direction. Select temperature ratings in accordance with operating conditions, but no less than intermediate (because of expected high temperatures).

C. FM Approved "pilot" sprinklers are suitable for use as fixed temperature detectors. This type of detection system uses automatic sprinklers to release pressure from a pilot air or water line controlling the valves. Space and install the pilot sprinklers in accordance with sprinkler system installation guidelines.

2.2.5.4 Where heat detectors are inaccessible during cooling tower operation, provide test detectors, accessible from the ground or roof, for each circuit. With pilot sprinkler detection, provide an inspector's test valve accessible from grade or building roof on each pilot system.

2.2.5.5 Use corrosion resistant heat detector components if they will be exposed to corrosive vapors or liquids.

2.3 Operation and Maintenance

The completion of cooling tower structural inspections are of extreme importance to prevent an ensuing structural collapse or wind damage to the cooling tower. These recorded inspections should be performed by a qualified contractor or client personnel. These inspections should include the cooling tower exterior as well as interior, and focus on things such as deteriorated structural members, corroded sprinkler heads and piping, the cold water basin, drift eliminators, fan blades, etc. As part of an asset integrity program, conduct the inspections at least every six months or at every major scheduled cooling tower outage. See Data Sheet 9-0, *Asset Integrity* for guidance on developing an asset integrity program.

2.3.1 Inspection, Testing and Maintenance

2.3.1.1 As part of the asset integrity program, inspect mechanical-draft cooling towers weekly. After being placed in service following nightly or weekend shutdowns, the cooling tower should be inspected immediately for any abnormal conditions. Inspection from the fan deck will enable the cooling tower operator to detect excessive heat, noise, or vibration. If observed, make a more complete inspection of the entire cooling tower.

2.3.1.2 Every six months, ensure a qualified contractor or client personnel makes an inspection of mechanical-draft cooling towers while the cooling tower is in operation and while shut down. Check the condition of mechanical equipment. Replace worn or deteriorated parts. Pay particular attention to the items listed in Table 1.

2.3.1.3 Every six months, make a detailed inspection of the structure for collapse potential, to detect: rotted, badly corroded, or otherwise defective framing, loose or badly corroded bolts, or deteriorated foundations. Inspect the condition of the sprinkler system.

2.3.1.4 Test heat detectors every six months. Measure the loop resistance of line-type heat detectors semi-annually. For pilot sprinkler systems, use the test valve to trip the deluge system during the test. Trip test the deluge system in conjunction with testing of heat detectors or by the use of the test valve for pilot sprinkler systems when applicable. Ensure the pilot sprinkler system properly holds air pressure and check this on an annual basis. (Refer to Data Sheet 2-81, *Fire Safety Inspections and Sprinkler System Maintenance* for further detail).

2.3.1.5 Post instructions for stopping the fan, in case of fire, at convenient locations near the cooling tower and at control switches. Instruct the emergency response team on the following:

- How to stop the fan
- The need for continuing water flow through the cooling tower evaporating system
- The method of starting the flow in case of fire during a shutdown perio

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Table 1. Preventive Maintenance Schedule for Key Cooling Tower Components

Component	*Weekly*	*Monthly*	*Seasonal Shutdown*	*Seasonal Startup*
Fan motor	—	Check mounting bolts	Clean and cover	Lubricate if required, tighten mounting bolts.
Speed reducer	Check oil level, visual inspection.	Check oil level, check mounting bolts.	Overfill with oil, clean and cover.	Refill with oil and tighten mounting bolts
Fan wheel	Visual inspection, remove foreign matter.	Check bolts, check set screws.	Clean and cover.	Clean and paint hub, check blade pitch. After adjusting pitch, adequately torque bolts and lock-wire in place.
Drive shaft	Visual inspection	Check shaft alignment.	Clean and cover.	Realign.
Distribution system	Remove foreign matter.	Remove foreign matter.	Drain and clean.	Inspect and clean.
Cold-water basin	Remove foreign matter.	Remove foreign matter.	Drain and clean.	Inspect and clean.
Sump and screen	Remove foreign matter.	Remove foreign matter.	Drain line and shut off.	Inspect and clean.
Float valve	Visual inspection	Check valve operation.	Drain line and shut off.	Check operation.
Overflow Connections	Visual check	Visual check, tighten bolts.	—	Tighten bolts.

2.3.1.6 Provide noncombustible air-intake filters on crossflow cooling towers to keep leaves and other debris from getting drawn into the cooling tower resulting in the fouling of fill, sumps, or strainers.

2.3.1.7 Ensure all electrical testing, including maintenance of cooling tower pumps and motors, is completed per requirements of Data Sheet 5-20, *Electrical Testing*.

2.3.1.8 Every six months, visually inspect for any potential damage to wind exposure including items such as anchors and securement of the casing/wall panels.

2.3.2 Wetting Idle Wood Sections

2.3.2.1 For a combustible cooling tower circulate water sufficiently to wet the inside surfaces before the fans are started.

2.3.2.2 Wet idle wood sections by circulating water at intervals sufficient to keep the wood from drying out.

2.3.3 Collapse

2.3.3.1 Continually treat water in the cooling system to maintain effective concentrations of treatment chemicals. Carefully design the treatment system to prevent damage from biological growth, corrosive products, and sedimentary deposits.

2.3.3.2 To prevent ice formation on cooling towers during the winter months, rotate the fans in reverse, which provides heat (from the warm water) to melt the ice. This procedure is particularly effective in counterflow cooling towers whose enclosed sides retain heat. Follow manufacturers' instructions on frequency and duration.

2.3.3.3 For crossflow cooling towers, provide a constant distance between louvers and fill at all levels. This constant distance will result in a uniform light water cascade down the inboard edge of the louvers, which protects the fill from ice formation and possible damage.

2.4 Utilities

2.4.1 Electrical Equipment and Wiring

2.4.1.1 Install all electrical equipment and wiring pertaining to water cooling towers, including the arrangement of cooling tower pumps and fan motors, in accordance with the National Electrical Code (NFPA 70) or applicable local electrical codes.

2.4.1.2 Provide motors rated for outdoor use to protect them from dirt or moisture and to prevent sparks from reaching adjacent combustible construction.

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2.4.1.3 Arrange a closed circuit alarm system to operate when the fire protection system is tripped; interlock the system to stop the cooling tower fan. Provide a key-operated bypass switch to take the fans off the circuit for testing the system. Provide an alarm activated by the fire detection system in a constantly attended location so the fan can be shut down manually.

2.4.1.4 Provide an accessible, manually operated fan shutoff switch for emergencies.

2.4.1.5 If practical, arrange the process water pumps so the pumps will start automatically and pump into the fire protection system if the deluge valve operates. It is preferable to not utilize the process water pumps for the fire protection system and instead provide an independent fire protection system.

2.4.1.6 Provide high-vibration cutout switches and oil level safety shutdown devices on the cooling towers to guard against a major mechanical failure, which could cause extensive downtime for repair, as well as potential safety issues from damaged fan blades or drive shafts.

2.4.2 Lightning Protection

2.4.2.1 Provide lightning protection for hyperbolic cooling towers, cooling towers on tall buildings, and for other cooling towers in lightning-prone areas (Refer to Data Sheet 5-11, *Lightning and Surge Protection for Electrical Systems*).

2.4.3 Cooling Equipment Capacity

2.4.3.1 Evaluate the capacity and provide redundant cell capacity if needed for critical cooling equipment when supporting high-value processes. Review each cooling tower installation, to verify the adequacy, of the extra cooling tower capacity, if required, for the intended purpose and as part of the acceptance process.

2.5 Ignition Source Control

2.5.1 Do not permit smoking on or adjacent to any cooling tower of combustible construction or one that contains combustibles. Post signs to this effect and strictly enforce this requirement.

2.5.2 Explore alternatives to hot work on cooling towers. If there is no alternative to hot work in the proximity of combustible cooling tower materials, use the FM Global hot work permit system.

2.5.3 Install any temporary wiring that may be necessary during repairs in accordance with Article 305 of the National Electrical Code, NFPA 70, or applicable local electrical codes.

2.5.4 Pay attention to ignition sources when a cooling tower has been drained. One scenario could be a basin water electric heater igniting an FRP water basin.

2.6 Contingency Planning

2.6.1 Equipment Contingency Planning

When a cooling tower breakdown would result in an unplanned outage to site processes and systems considered key to the continuity of operations, develop and maintain a documented, viable cooling tower equipment contingency plan per Data Sheet 9-0, *Asset Integrity*. See Appendix C of that data sheet for guidance on the process of developing and maintaining a viable equipment contingency plan. Also refer to sparing, rental, and redundant equipment mitigation strategy guidance in that data sheet.

If the equipment contingency plan relies on the use of rental cooling towers, then a contractual arrangement is needed. Consider the terms and conditions of the contract, including provisions for widespread events clause (Force majeure clauses).

One key aspect of the success of rental cooling towers involves arranging the piping systems and electrical systems in advance as part of their design to ensure quick hook-up of a replacement cooling tower. On all cooling towers, provide a blind flange on the cooling tower supply and return lines to facilitate use with rental cooling towers where they are being relied on as part of the equipment contingency plan. A flange or downstream isolation valve will ensure the cooling tower can be isolated from the supply line.

2.6.2 In addition, include the following elements in the equipment contingency planning process specific to cooling towers:

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A. Processes:

1) Cooling capacity needed vs. rentals available
2) Shift to other in-house sources (e.g., public water)
3) Shift to other sites (e.g., data center)
4) Margin-of-error (capacity vs minimum requirements)
5) Environmental permitting requirements (out-of-limits, penalties)

B. Siting:

1) Space availability for ganging units
2) Temporary connection compatibility
3) Electrical compatibility
4) Pumping requirements (flow rates, elevations, etc.)

2.7 FM Approved Cooling Tower Designs

2.7.1 Ensure FM Approved cooling towers are designed and installed as specified and in accordance with any limitations in the Approval Guide.

3.0 SUPPORT FOR RECOMMENDATIONS

3.1 Cooling Tower Applications

Cooling towers are used to cool process water. Warm water is distributed in the cooling tower by spray nozzles, splash bars, or filming-type fill in a manner that exposes a very large water surface area to atmospheric air, thus cooling it. The atmospheric air is circulated either by fans, convective currents, natural wind currents, or the induction effect from sprays.

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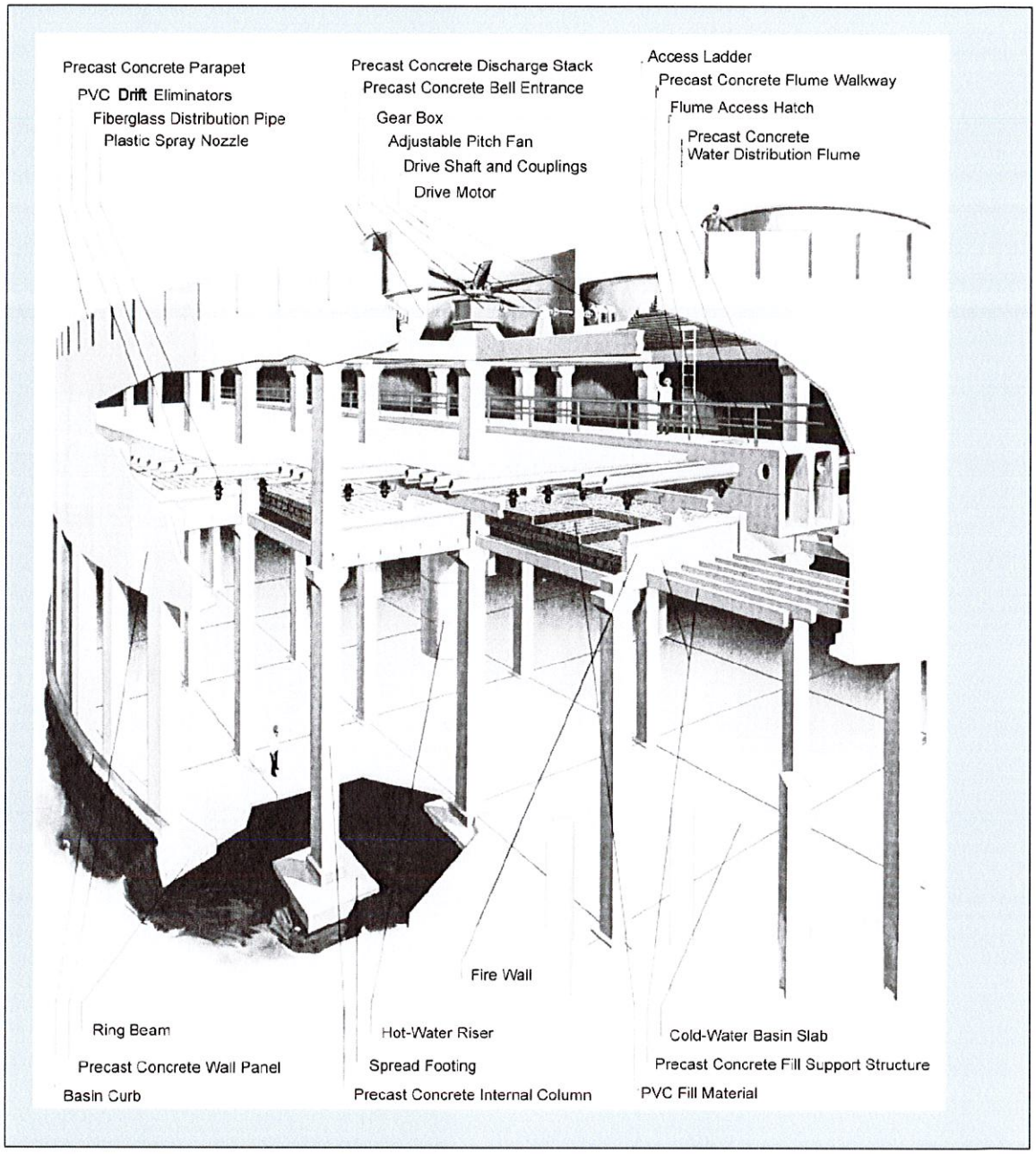

Fig. C-1. Precast concrete round multi-fan mechanical draft cooling tower (Courtesy Zurn Industries Inc.)

3.1.1 FM Approved Cooling Towers vs. Those That Are Not FM Approved

This data sheet includes information on both FM Approved cooling towers and those that are not FM Approved that fall into one of the following categories:

A. Cooling towers of limited combustibility (fire does not self-propagate in cooling tower components beyond the area of exposure) according to acceptance criteria in FM 4930. This type usually incorporates either fire retardant (FR) fill and other components in a noncombustible shell, or noncombustible fill within an FR fiberglass-reinforced plastic shell. These could include single-cell or multi-cell cooling towers. Cooling towers of limited combustibility due to their design do not require additional capacity or redundancy.

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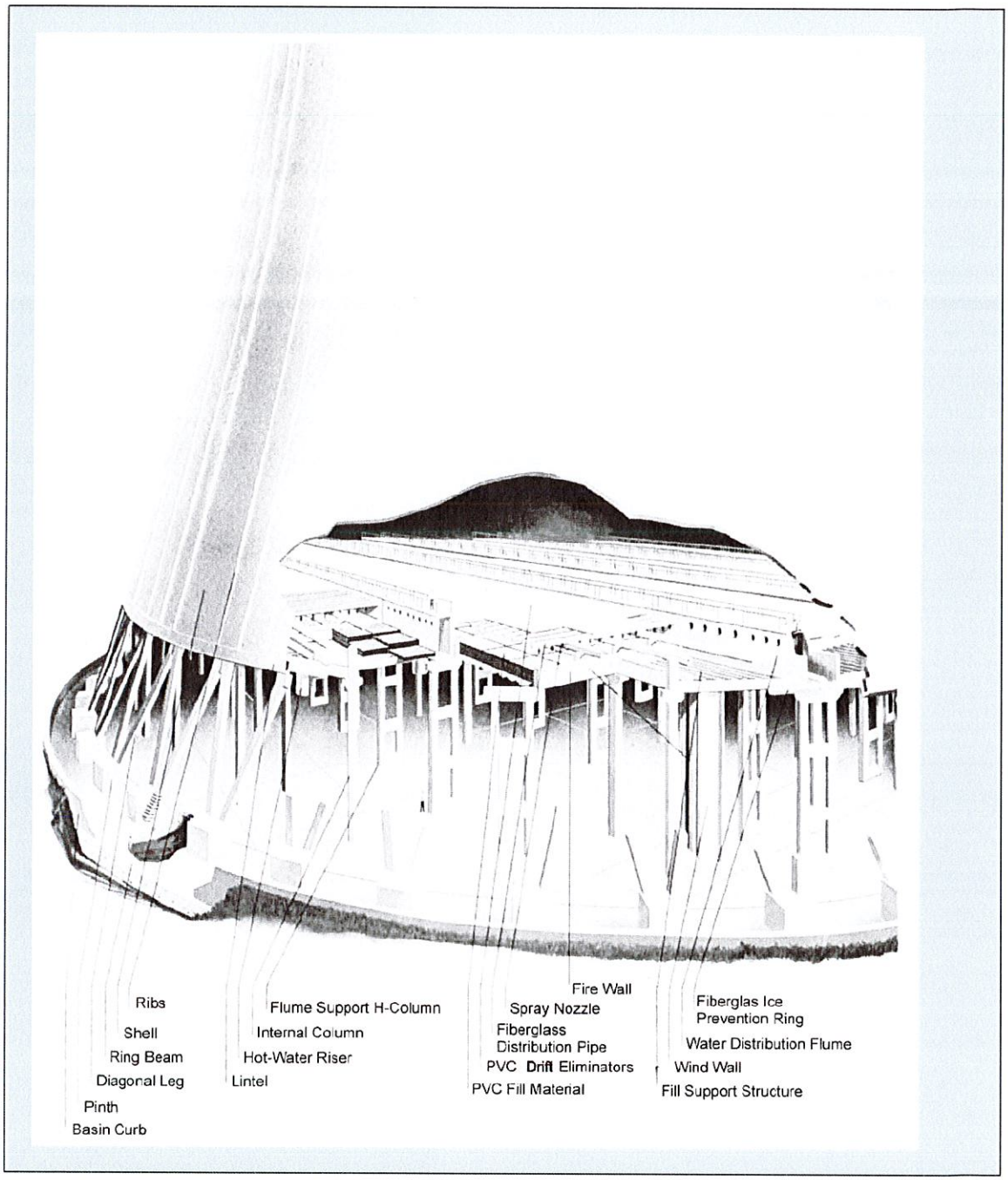

Fig. C-2. Precast concrete natural-draft hyperbolic cooling tower (Courtesy Zurn Industries Inc.)

B. Single-cell cooling towers, where the fire spread through testing, is shown to be limited to only a portion of a given cell according to Acceptance Criteria found in FM 4930.

C. Multi-cell cooling towers, with additional capacity so that, under worst-case fire conditions, a fire may burn out one cell, but be limited to that cell and not affect adjacent cells. With this type of cooling tower design, at least one additional cell is always provided so that extra capacity and reliability will always be available. FM Approval testing of multi-cell cooling towers confirms that the fire will be contained to a given cell.

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All types of FM Approved cooling towers have been tested in full-scale fire tests and shown to be acceptable without automatic sprinkler protection. See the Approval Guide for further details on FM Approved cooling towers. FM Approvals does not Approve cooling tower fill or cooling tower components (drift eliminators, fan decks, etc.). They only Approve the cooling tower as an assembly based on full-scale fire testing of the complete cooling tower assembly.

3.2 Types of Cooling Towers

Figure 7 shows the types and main parts of common cooling towers.

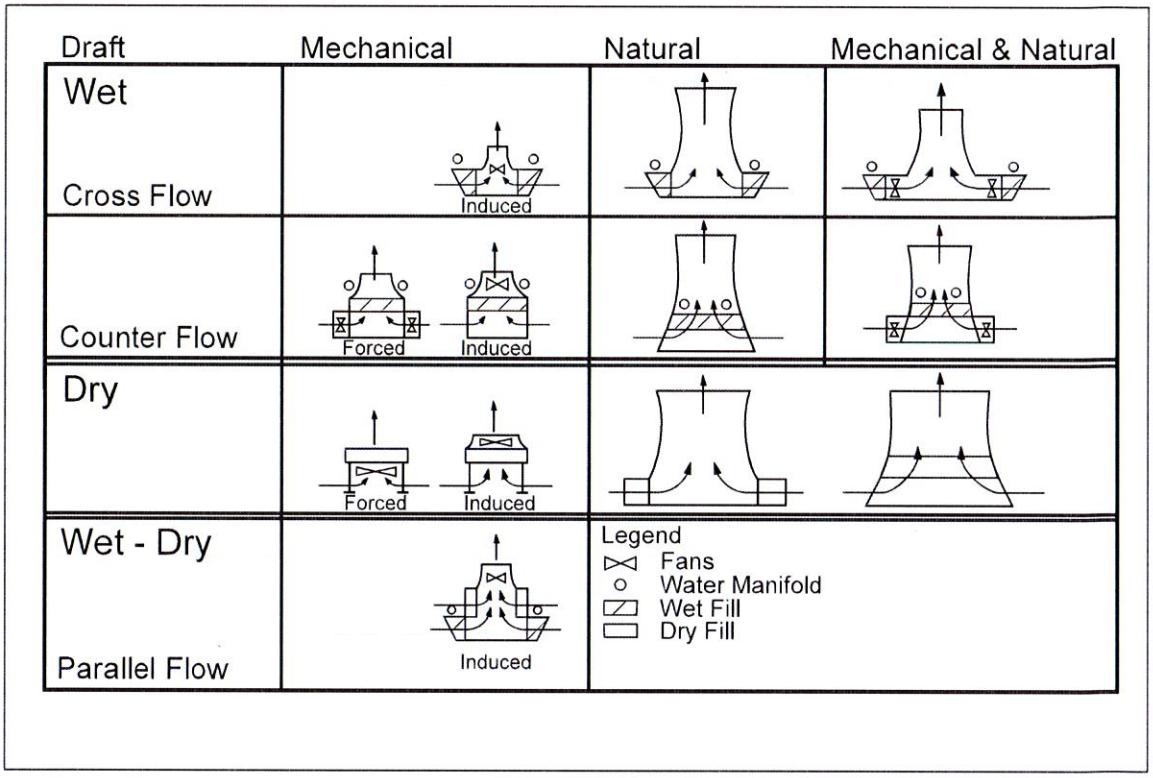

Fig. 7. Types of important cooling towers in use

3.2.1 Wet or Dry

In wet cooling towers the water to be cooled is exposed directly to the airstream, while in dry cooling towers it is run through piping similar to a radiator. Some cooling towers may have a wet section and, above it, a dry section. Either or both portions of such cooling towers may be used at any time depending on load requirements and atmospheric conditions.

3.2.2 Mechanical Draft or Natural Draft

In mechanical-draft cooling towers the cooling air is moved by fans, usually electrically driven. In natural-draft cooling towers air movement is provided by the stack effect resulting from the difference in density between two interconnected columns of air at different temperatures. The latter are called "hyperbolic" cooling towers because the stack generally is a thin, reinforced concrete shell with a surface generated by revolving a hyperbola about a vertical axis. A few cooling towers have been constructed of steel with approximately the same shape. Some cooling towers combine natural and mechanical draft, using natural draft normally and a combination of the two when atmospheric conditions warrant.

3.2.3 Counterflow or Crossflow

In a counterflow cooling tower the cooling air moves upward against the falling water, while in a crossflow cooling tower the cooling air moves horizontally across the falling water. Either type may use mechanical or natural draft.

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3.2.4 Induced-Draft or Forced-Draft

Induced-draft cooling towers are mechanical-draft cooling towers with a fan, usually located at the top of the cooling tower. Air is drawn out of the cooling tower after it has entered through louvers in the sides. They may be either the crossflow or counterflow types. A forced-draft cooling tower has a fan at the base of the cooling tower, which blows outside air through the dripping water and out the open top of the cooling tower. Forced-draft cooling towers usually are small.

3.2.5 Induced-Draft Counterflow (Combustible)

Figure 1 shows a typical induced-draft, counterflow cooling tower. The fan is at the top of the cooling tower. Air enters through the louvers (13) at the base of the cooling tower, flows upward through the fill (11) and drift eliminators (9), and then is discharged through the fan cylinder (5). Generally, the fill and drift eliminators are combustible. Warm water enters at the inlet (10) and is discharged over the combustible fill. The water passes through the fill and approximately 2% to 3% is evaporated. The other 97% to 98% is cooled and falls to the basin (14). Water droplets, called drift, carried in the updraft are largely trapped by the drift eliminators and returned to the basin. Dead air spaces outside the flow of air create dry sections below the deck on the walls and within the fill. There is sufficient space below the fan deck for installation of a sprinkler system (1).

3.2.6 Induced-Draft Counterflow (Noncombustible)

Figure 8 shows another type of induced-draft, counterflow cooling tower. This cooling tower differs from that shown in Figure 1 in that the shell is reinforced concrete and the fill consists of vertically hung sheets of cementitious board. This type of cooling tower generally contains little combustible material.

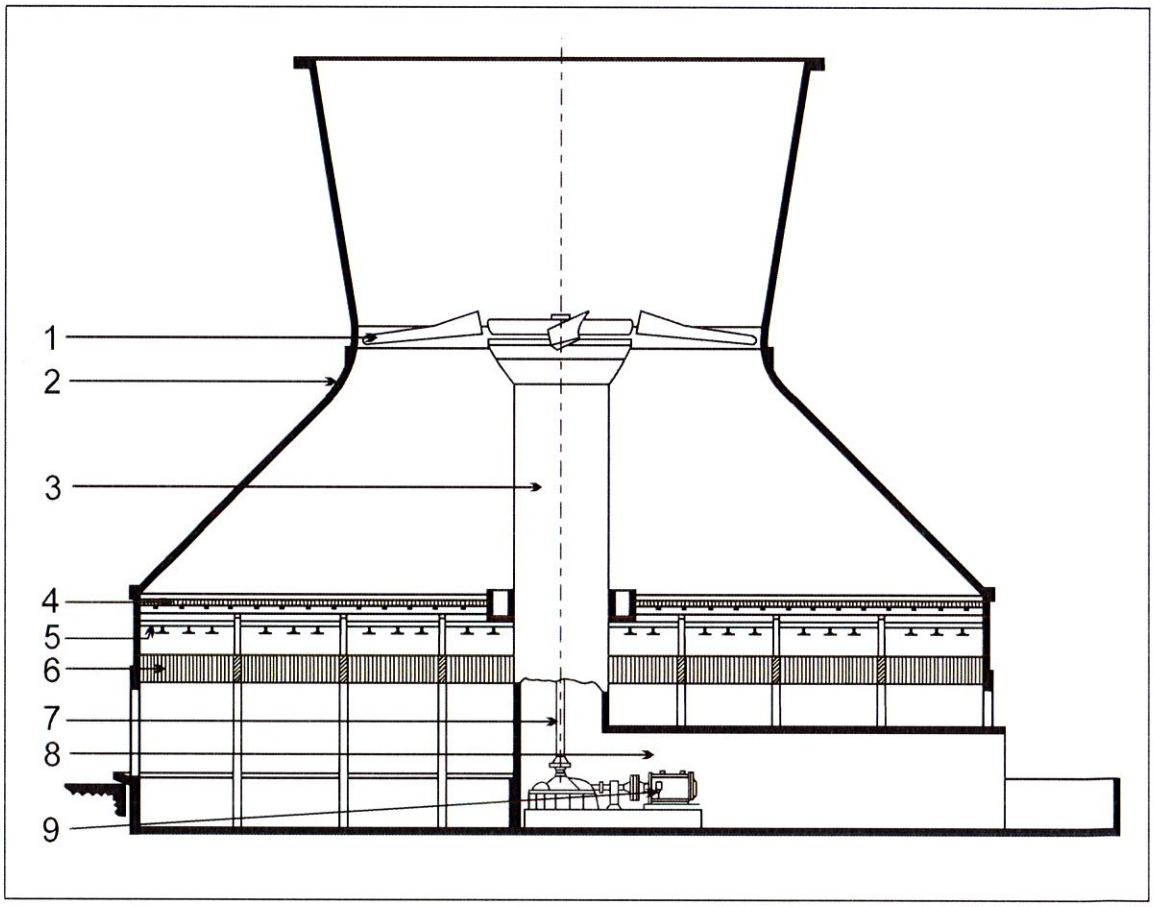

Fig. 8. Cross section of a counterflow induced-draft cooling tower (An alternate design to that shown in Figure 1.)

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3.2.7 Induced-Draft Crossflow (Open Basin)

Figure 2 shows a typical induced-draft, crossflow cooling tower. The fan (2) is at the top of the cooling tower.

In this cooling tower, the lower portion of the drift eliminators, fan deck, and the walls below the fan deck are out of the direct flow of moist air and may be dry. Other elements of a cooling tower, that are wet while the cooling tower is in service, will dry out when the cooling tower is shut down.

Sprinklers can be installed below the fan deck to protect such areas. Sprinklers will also protect the drift eliminators while the cooling tower is shut down.

There is not sufficient space between the top of the fill (11) and the distribution basin (8) for conventional sprinkler protection. The fill can be protected during the periods it may be dry by providing special nozzles FM Approved for this use outside of the fill area. The nozzles direct water across the space below the basin. Recommendations of the manufacturer of the FM Approved nozzles must be followed for satisfactory water distribution. Minimum nozzle pressure will depend on the width and length of the fill and the design of the distribution deck. Water demand is difficult to estimate because it is dependent on pressure rather than density. With wide fill areas, nozzles may be placed on both sides of the fill so the water will be directed over the entire top surface.

In the latest designs of crossflow cooling towers, the distribution deck is omitted and target nozzles (metering orifices) are fitted to the hot water basin. (See detail in Figure 4.) With an open basin and no distribution deck, sprinkler protection can be provided only by removing or omitting fill below the basin as needed for clearance and using upright sprinklers below the basin. If no fill can be omitted, a cooling tower nozzle FM Approved for this purpose can be used.

3.2.8 Induce-Draft Crossflow (Closed Basin)

Figure 4 shows an induced-draft, crossflow cooling tower with a covered hot water basin (8). This is similar to the cooling tower shown in Figure 2, except the fan deck has been extended to cover the basin.

3.2.9 Hyperbolic Crossflow and Counterflow

Figure 9 shows a typical hyperbolic crossflow cooling tower. The fill area can be similar to either Figure 2 or Figure 4. Except for the replacement of the fan with a natural draft stack, the problems of protecting the fill are similar to those of mechanical-draft crossflow cooling towers. Detection presents special problems with hyperbolic cooling towers because of lack of a fan deck.

Figure 10 shows a typical hyperbolic counterflow cooling tower. This type is similar to that in Figure 8 with the fan and drive removed. Although the cooling tower construction is noncombustible, the presence of combustible fill may warrant the consideration of fire protection on a case-by-case basis. Usually there are not sufficient combustibles present for a recommendation for fixed fire protection.

3.2.10 Forced Draft

Figure 11 shows a typical forced-draft cooling tower. Forced-draft cooling towers are usually counterflow, as illustrated. The loss experience for such cooling towers is good. The fan and drive are located below the fill and exterior to the cooling tower proper. Also, the frame is usually noncombustible, and there are few dry areas while the cooling tower is in operation. Such cooling towers are usually of low value.

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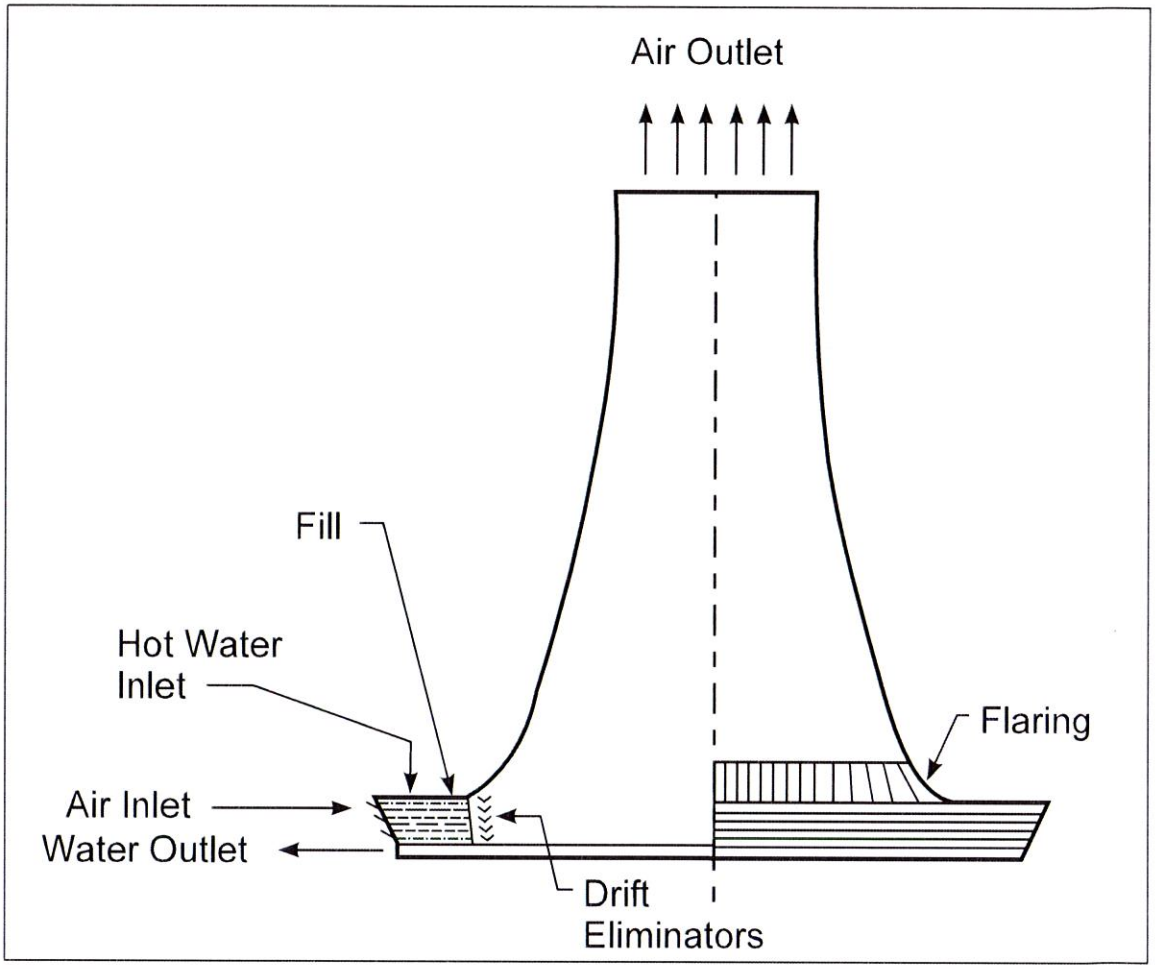

Fig. 9. Crossflow hyperbolic cooling tower.

3.2.11 Dry Cooling Towers

In a dry cooling tower, the water is run through piping similar to a radiator or condenser (Figure 12). Nearly all large dry-cooling tower technology has been developed in Europe, where a number of installations have been operating successfully. Dry cooling towers generally do not pose a fire hazard because they are of noncombustible construction.

Lately, dry cooling towers have attracted considerable attention in the United States and may become more popular as available water supplies become scarcer.

Air-cooled heat exchangers (also called air-fin or fin-fan units) are similar in construction. These are commonly used in chemical processing facilities for cooling or condensing many types of fluids, including ignitable liquids. These can pose severe fire challenges and should be constructed and protected per Data Sheet 7-14, *Fire Protection for Chemical Plants*.

3.2.12 Wet/Dry Cooling Towers

Cooling towers that usually contain a conventional mechanical-draft unit in combination with an air-cooled (finned-tube) heat exchanger (Fig. 13) are wet/dry cooling towers. They are used either for reduction of the discharge vapor plume or for water conservation. The hot, moist plumes discharged from cooling towers are especially dense in cool weather. On some installations, the lessening of these plumes is required to avoid restricted visibility on roadways, bridges, and buildings.

These cooling towers can pose fire hazards if the wet section is built of combustible material.

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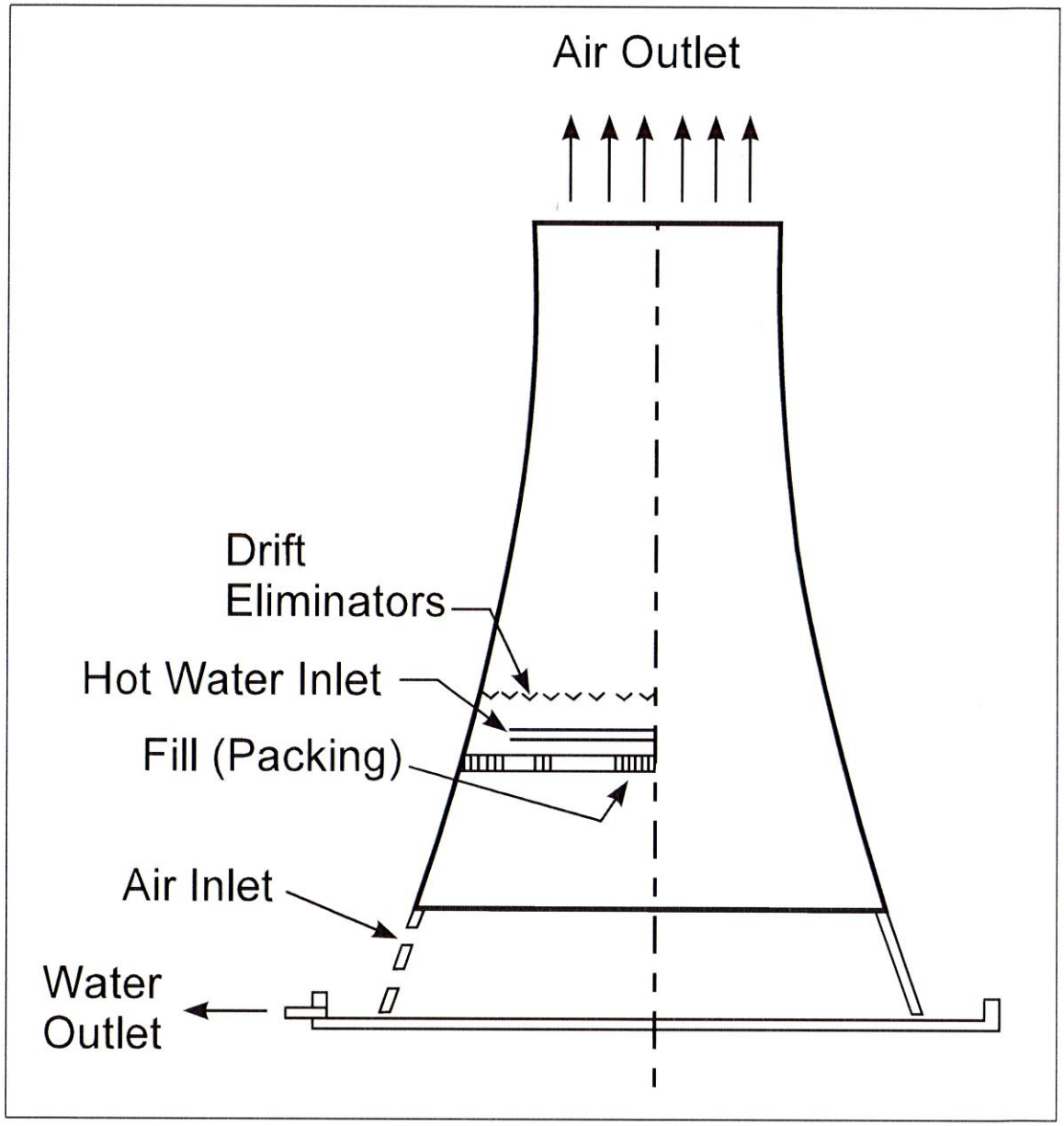

Fig. 10. Counterflow hyperbolic cooling tower.

3.3 Materials of Construction

Materials commonly found in cooling tower construction are selected to resist the generally corrosive conditions. These materials can be wood, concrete, plastic, or metal. Cooling towers of combustible construction present a potential fire hazard. This hazard exists both when the cooling tower is shut down and when the cooling tower is in operation because of relatively dry areas within the cooling tower. The use of engineered plastic cooling towers is significantly increasing because they generally require much less maintenance and are more energy-efficient than cooling towers with galvanized steel shells.

Wood. Wood is used for all static components, excluding hardware. Redwood and fir predominate, usually with post-fabrication pressure treatment with preservative chemicals that prevent the attack of wood-destructive organisms, such as termites or fungus. However, these woods still pose a fire hazard, unless they have been FM Approved as being fire-retardant materials. At the present time there are no FM Approved fire-retardant wood products.

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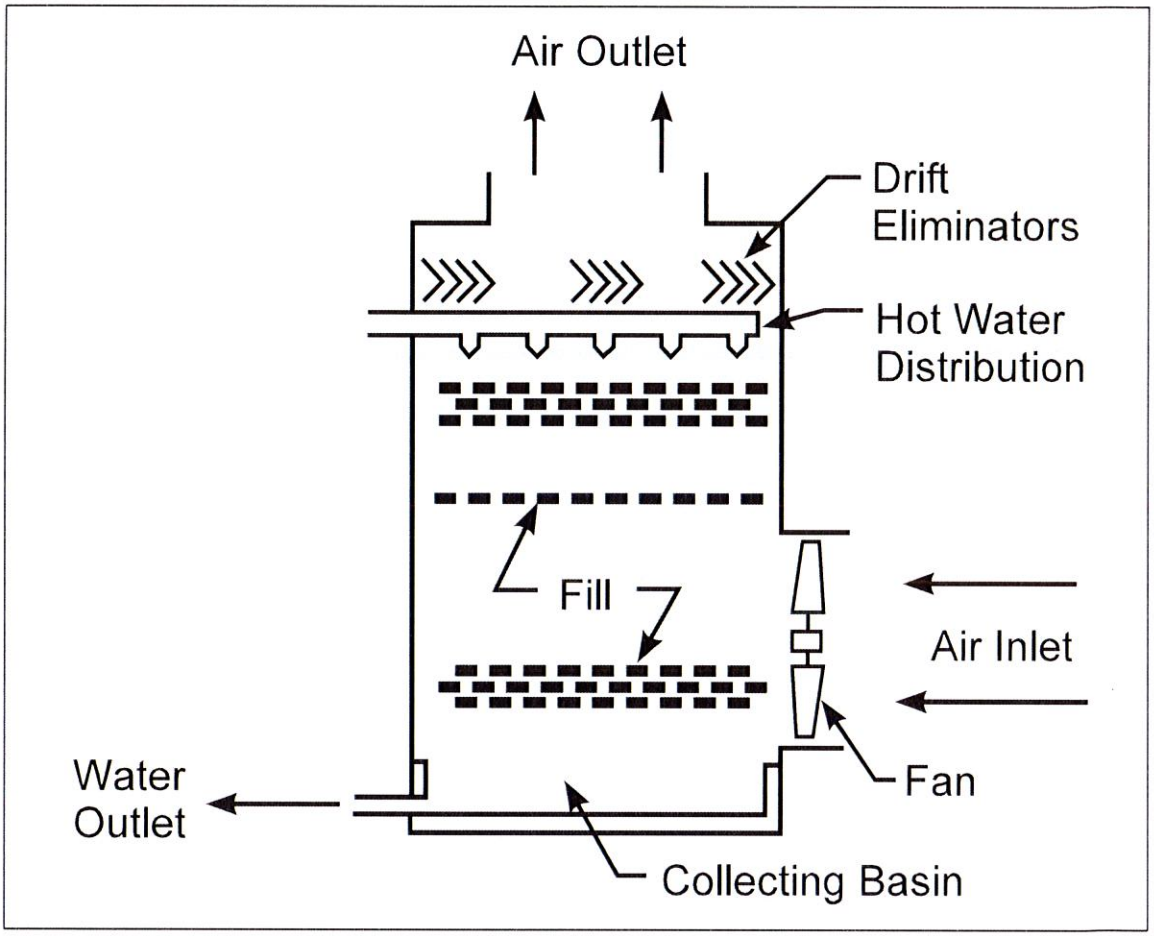

Fig. 11. Typical forced draft cooling tower (counterflow)

Plastics. Fiberglass-reinforced plastic materials have broad use, especially for complex-shaped components, such as piping, fan cylinders, fan blades, and structural connecting members. Polypropylene, ABS (acrylonitrile-butadiene-styrene), and other plastics are used as fill bars and flow orifices. All of these materials pose fire hazards and the need for protection must be evaluated when they are used in cooling towers.

The use of PVC is increasingly popular. Some FM Approved cooling towers utilize PVC materials as louvers, fills, and drift eliminators without the need for sprinkler protection. These materials are not considered interchangeable, so any deviation from the materials Approved for use with a given cooling tower must be evaluated and may require sprinkler protection.

Sheets of neoprene-asbestos are often formed for fill and eliminators. Reinforced plastic mortar is finding use in larger piping systems coupled with neoprene O-ring-gasketed ball and socket joints. These materials have not been tested by FM Approvals. Consequently, in cases where these materials are used, they must be evaluated individually to determine the fire hazard and protection warranted.

Concrete, Masonry and Tile. Concrete is typically specified for the cold water basin of field-erected cooling towers and is finding wide use in piping, casing, and as structural elements of large cooling towers, primarily in the power industry. Special tiles and masonry generally are used where aesthetic considerations are important. Cementitious board has been used for casing, louvers, eliminators, and fill to meet noncombustible requirements.

Metals. Steel with galvanized zinc coating may be specified for small and medium size installations.

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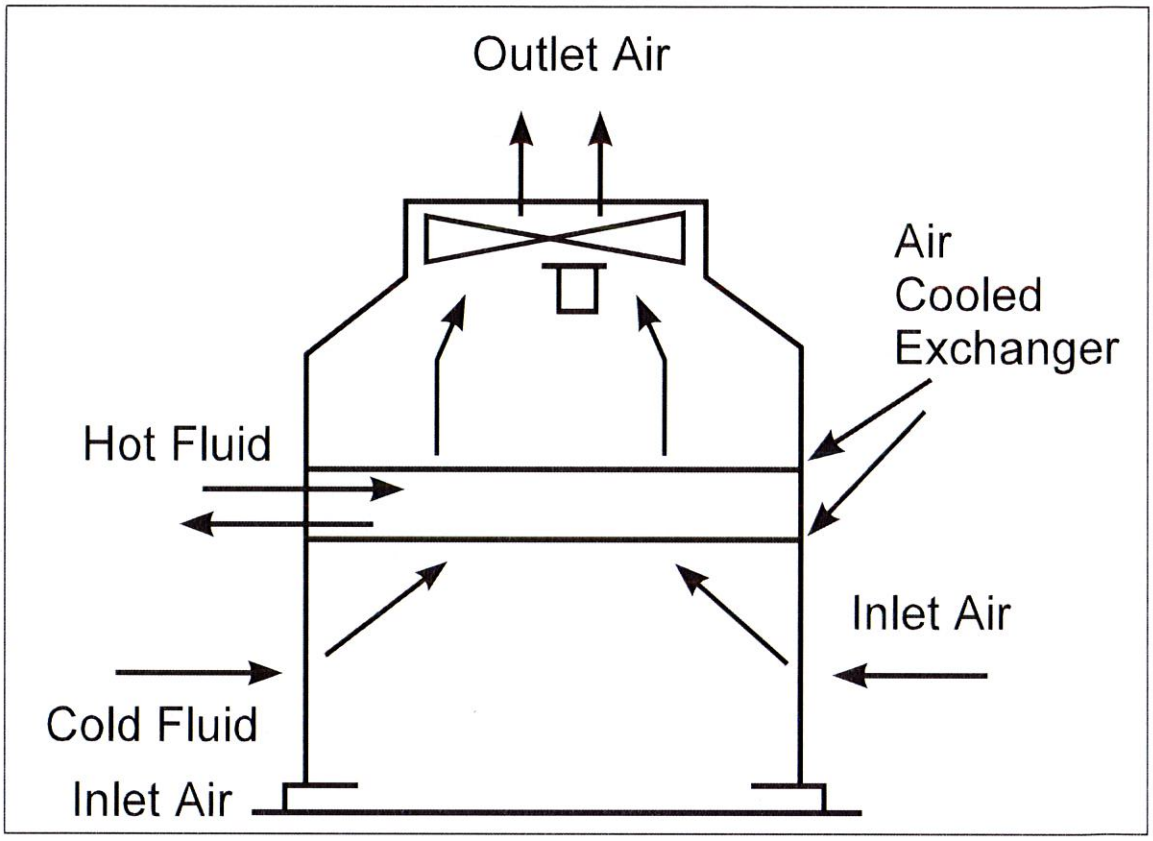

Fig. 12. Dry cooling tower

3.4 Design Considerations

3.4.1 Fire

An understanding of the construction of a cooling tower is helpful in recognizing the nature and location of potential fire hazards. A wood cooling tower and its components are supported by framing, generally treated redwood or Douglas fir. Noncombustible cooling towers generally use reinforced concrete supports. The shell of natural-draft (hyperbolic) units is independently supported by diagonal, reinforced-concrete columns on a ring foundation.

The fan cylinders on mechanical-draft cooling towers (or the hyperbolic shell on natural-draft units) provide the exit for air flow. Fan cylinders can be of wood, fiberglass, corrosion-resistant metal, or reinforced concrete.

The fan deck, which supports the fan cylinders and related fan assemblies, is usually made of wood. Because the fan deck is drier than any other part of the cooling tower and is the most accessible to ignition sources, the wood is often covered with asbestos cement or other noncombustible material.

The cooling tower fill presents the most serious fire potential in a cooling tower, especially if combustible materials are used. This is where the cooling action occurs by means of heat transfer and evaporation, and it is where most effort in fire prevention, detection, and suppression must be directed. Fill will be wet while the cooling tower is in operation but dries out when the cooling tower is shut down. Plastic fill does not absorb moisture and dries faster than wood fill. During shutdown, all combustible fill is dry enough to burn.

The fill consists of slats or bars, supported by fiberglass or plastic-covered wire grids or other support arrangements. It is located between the hot-water basin and the cold-water collection basin at the base of the cooling tower. On a mechanical-draft unit (counterflow or crossflow), the fill runs the entire length of the cooling tower on one or both sides. On a natural-draft cooling tower, the fill circles the hyperbolic shell or sits within the lower part of the shell (counterflow cooling towers).

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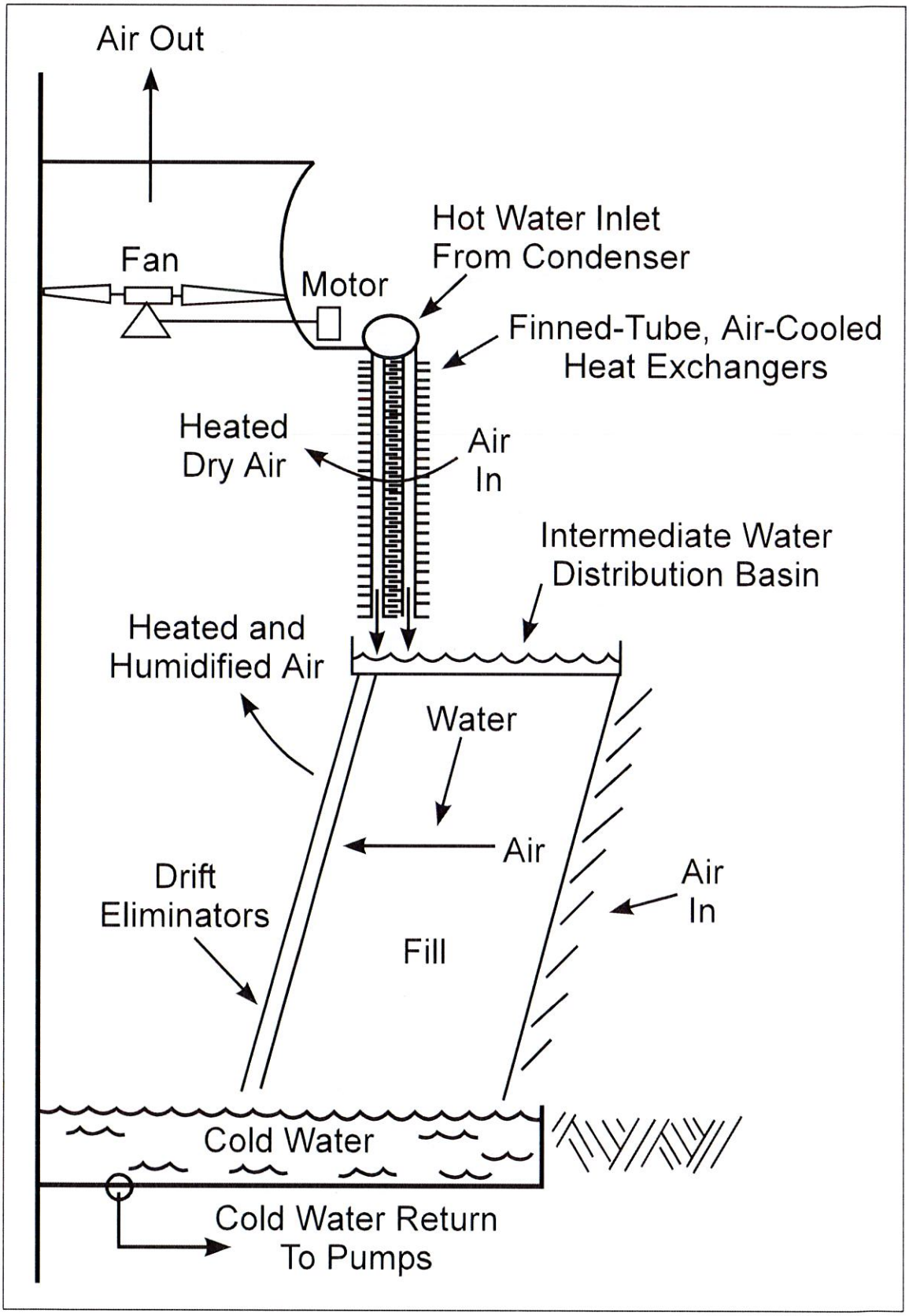

Fig. 13. Combination wet-dry cooling tower

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Redwood had formerly been used years ago as a fill material, but plastics primarily polyvinyl chloride (PVC), polypropylene, polyethylene, and polystyrene have largely been replacing redwood. Polystyrene presents the greatest fire potential. Noncombustible fills may include stainless steel, ceramic tile and asbestos cement. Asbestos cement is not commonly used in new installations.

Drift eliminators are similar to fill, except they are arranged as baffles on rigid supports. Their purpose is to minimize the amount of water droplets carried out of the cooling tower in the air stream.

Air-inlet louvers may be made of wood, plastic, asbestos cement, or concrete. Avoid wood or other combustible material louvers; even on protected cooling towers they are not usually covered by the fire suppression system and can become exceptionally dry and prone to ignition.

Ignition within a combustible cooling tower can be caused by welding or cutting operations, smoking, overheated bearings, electrical failures, or from outside sources, such as incinerators, smoke stacks, and other heat-or spark-producing equipment. Maintenance vehicles operating in or around cooling towers can start a fire as the result of a fire in the vehicle itself.

Water used for cooling flammable gases or ignitable liquids may constitute an unusual hazard. The hazard exists when the cooling water pressure is less than that of the material being cooled. The gas or liquid can mix with the cooling water, be transported via the cooling water return line, and be released at the cooling tower distribution system where it can be ignited.

3.4.2 Wind

Cooling towers have to be situated in unsheltered locations to operate efficiently. They often are located on the roofs of buildings to take advantage of the higher wind velocity. Due to their siting they can be exposed to high winds, and wind damage continues to be a key exposure to guard against.

The natural-draft (hyperbolic) cooling towers must be tall, 300 ft (91 m) or more, to function effectively. The dynamic response of such cooling towers to buffeting winds can provoke collapse and cause substantial damage to the unit.

Small package roof-mounted cooling towers are sometimes installed without sufficient anchorage. These may be blown about, causing damage to the unit and the roof.

3.4.3 Earthquake

The fill in cooling towers is light and not subject to disturbance when exposed to moderate shaking. However, during one earthquake, fill in a roof-mounted cooling tower was disturbed while fill in cooling towers at ground level was undisturbed.

The hyperbolic cooling tower is a cantilever structure and can experience magnification of amplitude, as does a high-rise building.

3.4.4 Collapse

Several events can lead to the collapse of a cooling tower. The actual collapse is generally caused by a combination of events.

Cooling towers often are operated intermittently, resulting in atmospheres that are alternately wet and dry. Consequently, deterioration and loss of strength of some of the cooling tower materials takes place. Especially for older wooden cooling towers, collapse potential needs to be carefully monitored over time.

Strong caustic or acidic solutions attack most materials, reducing their strength. Wood in a cooling tower can become weak by biological attack.

Air-borne particles or accumulations of small amounts of sediment introduced by makeup water can overload the cooling tower. Also, sediment deposits can appear in open sprinkler systems. Pressure differentials in the atmosphere at different points in the sprinkler system move moisture through the piping, depositing sediment along the connecting piping.

Algae, slime-forming bacteria, fungi, and other microorganisms breed easily in cooling tower systems because the water is continually being introduced to fresh supplies of organisms present either in the makeup water or in air passing through the cooling tower. These growths can form an insulating coat on heat transfer surfaces, boost the rate of corrosion, and cause the degradation of wood used in cooling towers.

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Ice buildup on fill slats is a constant threat, particularly regarding localized collapse. Cooling towers may require protection against ice formation when the wet-bulb temperature is below 32°F (0°C), or during shutdown when the temperature drops below 32°F (0°C).

3.4.5 Lightning

Lightning is a primary natural cause of cooling tower fires. Because cooling towers are large, free-standing structures located in remote areas of a property or on tall buildings, they are ideal targets for lightning strikes.

3.4.6 Fire Exposure

A significant percentage of fires in cooling towers of combustible construction are caused by ignition from outside sources, such as incinerators, smoke stacks, or exposure fires. Fires in cooling towers also may create an exposure hazard to adjacent buildings and other cooling towers. Therefore, distance separation from buildings and sources of ignition, protection for the cooling towers, and the use of noncombustible construction are primary considerations in preventing these fires.

3.4.7 Hail

In recent years, several hail losses to cooling towers have been experienced. Consideration must be given to this issue when constructing cooling towers in areas exposed to a high incidence of hailstorms. Most of the hail damage has involved roof-mounted cooling towers and denting of the cooling tower enclosure from hail impact, as well as damage to the fan.

3.5 Business Interruption

A cooling tower can be critical to the operation of an entire facility. Loss of a cooling tower could result in the shutdown of some or all production.

3.6 Inspection, Testing and Maintenance

As with any mechanical device, a cooling tower can provide optimum thermal performance, efficient operation, fire safety, and maximum service life only through a well-administered program of regular inspection, testing and maintenance as part of the asset integrity program. Most cooling tower manufacturers will furnish operating and maintenance manuals (including parts lists for their specific units) which need to be followed closely.

4.0 REFERENCES

4.1 FM Global

Data Sheet 1-2, *Earthquakes*
Data Sheet 1-28, *Wind Design*
Data Sheet 2-8, *Earthquake Protection for Water-Based Fire Protection Systems*
Data Sheet 2-81, *Fire Protection System Inspection, Testing and Maintenance and Other Fire Loss Prevention Inspections*
Data Sheet 5-11, *Lightning and Surge Protection for Electrical Systems*
Data Sheet 5-20, *Electrical Testing*
Data Sheet 5-48, *Automatic Fire Detection*
Data Sheet 7-14, *Fire Protection for Chemical Plants Flammable Gas Processing Equipment and Supporting Structures*
Data Sheet 7-78, *Industrial Exhaust Systems*
Data Sheet 9-0/17-0, *Asset Integrity*

Understanding the Hazard: *Fire in Cooling Towers* (PO044)
Understanding the Benefit: *FM Approved Cooling Towers* (P11085)

FM 4930, *Approval Standard for Cooling Towers*

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4.2 Other

National Fire Protection Association (NFPA). NFPA 70, *National Electrical Code*.

National Fire Protection Association (NFPA). NFPA 214, *Standard on Water-Cooling Towers*.

APPENDIX A GLOSSARY OF TERMS

FM Approved: Products and services that have satisfied the criteria for Approval by FM Approvals. Refer to the *Approval Guide*, an online resources of FM Approvals, for a complete listing of products and services that are FM Approved.

Package-type cooling tower: These cooling towers are smaller in size and are factory assembled rather than field erected. The package-type units can be roof mounted or ground mounted and will typically fit on a trailer with all of it's components delivered to the site.

APPENDIX B DOCUMENT REVISION HISTORY

The purpose of this appendix is to capture the changes that were made to this document each time it was published. Please note that section numbers refer specifically to those in the version published on the date shown (i.e., the section numbers are not always the same from version to version).

April 2020. This document has been completely revised. Significant changes include the following:

A. Clarified the scope of the document.

B. Added detailed information on FM Approval testing process for multi-cell cooling towers.

C. Added emphasis on wind and collapse exposures.

D. Added an appendix that contains a contingency planning outline.

April 2017. Interim revision. Document scope was modified to further clarify requirements for additional cooling tower capacity.

October 2016. Interim revision. The document scope was modified to remove the reference to multi-cell towers needing to provide at least 75% of the design thermal capacity as this has been removed as an approval requirement in FM 4930.

April 2013. The intent of the recommendation for protection of combustible end walls on a cooling tower was clarified. Additionally, the required thermal capacity for a multi-cell cooling tower was clarified.

January 2013. Several of the recommendations were clarified, and the importance of conducting structural inspections of the tower was emphasized. Additionally, separation distances for cooling towers were reduced, detail was provided on cooling equipment capacity and redundancy requirements, and strict controls were emphasized for hot work.

April 2012. Terminology related to ignitable liquids has been revised to provide increased clarity and consistency with regard to FM Global's loss prevention recommendations for ignitable liquid hazards.

September 2010. Clarification was provided for protection of combustible fan cylinders on air cooled condensers.

January 2006. Changes for this revision primarily involve clarification of various recommendations.

September 2005. Changes for this revision primarily involve clarification of various recommendations.

May 2003. Minor editorial changes were made for this revision.

January 2001. This revision of the document has been reorganized to provide a consistent format.

Information has been added on various types of FM Approved cooling towers, including recently FM Approved multi-cell towers with redundant capacity.

June 1984. Complete revision.

May 1978. First issued, supersedes Handbook Chapter 74.

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APPENDIX C NFPA STANDARD

NFPA 214, Standard on *Water-Cooling Towers*, describes sprinkler protection for water cooling towers. Data Sheet 1-6 contains recommendations for towers with fill heights greater than 37 ft (11.3 m) and criteria for new cooling tower design. Data Sheet 1-6 also contains information dealing with FM Approved cooling towers and components. These conditions are not covered in NFPA No. 214.

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Hibbing Public Utilities

HIBBING PUBLIC UTILITIES COMMISSION

1902 E 6TH AVE
HIBBING, MINNESOTA 55746-0249

TELEPHONE 218-262-7700
FAX 218-262-7702

Item 6.C.

August 23, 2021

Patrick Garrity
Commission Chairperson
1902 E. 6th Ave.
Hibbing, MN 55746

Re: Barr Engineering Services

Dear Commissioners,

As approved by the Commission at the regular Commission meeting of May 25th, the staff augmentation arrangement with Barr Engineering has provided the needed engineering support to HPU operations to work with FM Global, refurbish Boiler 4, and provide on-going engineering support to me in this critical year of HPU's transition. As I gradually rebuild the management and staffing needs for the Utility's future, I would expect the reliance on contractors to diminish, as we replace with permanent hires.

To keep the momentum going in the interim, I am requesting an addition amount of $41,000 through the end of 2021 to continue to provide engineering support to HPU. A key focus of this work will be finalization upon the updated Risk Management Plan open items, including proactive annual, monthly maintenance and safety checks along with formalization of operator training and maintenance documentation.

Thank you for your consideration in this matter and I will be available at the regular meeting of August 24, 2021 to answer any questions you may have.

Sincerely,

HIBBING PUBLIC UTILITIES COMMISSION

Luke J. Peterson

Luke J. Peterson,
General Manager

LJP/plr
cc: Commission
A. Borland
File: commission/08 24 2021 Barr Eng Svcs.doc

Work Order No. 2021-04

Applicable to Agreement Dated March 26, 2021

between

Barr Engineering Co. (Barr) **3128 14th Ave. East** **Hibbing, MN 55746**	**Hibbing Public Utilities (Client)** **1902 6th Ave. East** **Hibbing, MN 55746**
Designated Representatives: Project Manager: Jim Keenan Project Principal: Jon Minne	**Designated Representative:** Luke Peterson, General Manager

I. Scope Language

This work order scope is for providing mechanical engineering staff augmentation services as well as associated onsite operational and project management services when requested. These services will be defined in this work order as Work Tasks. Addition of Work Tasks would modify this scope if needed.

Work Task 1 –Engineering Support; This work will include providing mechanical engineering support on an as needed basis when called on by the HPU General Manager for items such as troubleshooting operational issues, defining project needs and identifying additional work tasks or work orders.

II. Maximum Compensation and Assumptions ("Service Assumptions") Upon Which Maximum is Based

Barr has based this work order on providing services 10-20 hours per week, using the billing rates for our senior mechanical engineer and support staff. We realize that some weeks may require more time, but others may require less. We will remain flexible so that we can meet HPU's needs. Initially, Barr proposes to fill the staff augmentation role primarily with Senior Mechanical Engineer, Kurt L. Sobczynski, PE. Kurt has over 30 years of experience and has been working closely with your staff on various projects at the utility.

Barr also assumes that:

- Each task for this scope of work will need to be assigned by Luke Peterson or his designee.
- Barr personnel will provide advice and recommendations in the roles that they perform and will not be directing work or making operational decisions.
- Barr personnel will be available during normal business hours; after hours or weekends can be arranged upon request.

- Barr's deliverables will be signed by a Minnesota-registered professional engineer when appropriate.

The estimated fees for this Work Order is budgeted to be $41,000 for approximately 260 hours of time through the end of 2021 or until the budget amount is spent.

III. Schedule and Assumptions Upon Which Schedule is Based

Work on this project can continue immediately upon your notice to proceed and assumes we will provide services for the work tasks in this scope. This schedule will be extended as additional work tasks are added to the scope of services.

ACCEPTED AND AGREED TO:

BARR ENGINEERING CO.		Hibbing Public Utilities	
By:		By:	
Title:	Vice President	Title:	
Date:	8/19/21	Date:	

Hibbing Public Utilities

HIBBING PUBLIC UTILITIES COMMISSION

1902 E 6TH AVE
HIBBING, MINNESOTA 55746-0249

TELEPHONE 218-262-7700
FAX 218-262-7702

August 24, 2021

Patrick Garrity
Commission Chairperson
1902 E. 6th Ave.
Hibbing, MN 55746

Re: Request to Hire Accounting/Human Resources Coordinator

Dear Commissioners,

Per the job posting approved at the regular Commission meeting of July 27, 2021 for the Accounting/Human Resources Coordinator, I am pleased to report that we have completed the selection process. Four applicants were interviewed, with the top two candidates completing a written exercise to evaluate their critical thinking, knowledge, and communication skills.

Throughout the interview process, Stacie has demonstrated the highest professional expertise required for this position and outshone the other candidates for her tact, knowledge both accounting and human resource standards, ability to adapt to changing situations, capability to work within a team, and respond positively to in difficult situations.

Upon approval by the Commission, and successful completion of background check, I look forward to having Stacie join our team on September 7, 2021.

Thank you for your consideration in this matter. I will be available at the regular meeting of August 24, 2021 for discussion.

Sincerely,

HIBBING PUBLIC UTILITIES COMMISSION

Luke J. Peterson,
General Manager

LJP/plr
Attachment
cc: Commission
A. Borland
File: commission/08 24 2021 request to hire Accounting/HR Coord.doc

EMPLOYMENT AGREEMENT

THIS AGREEMENT, was made and entered into the ____ day of _____, 2021, by and between the Hibbing Public Utilities Commission, created by statute and a part of the City of Hibbing, Minnesota, a statutory city under the laws of the State of Minnesota, hereinafter called "Employer", as party of the first part, and Stacie Loe, hereinafter called "Employee", as party of the second part, both of whom understand as follows:

WITNESSETH:

WHEREAS, Employer desires to employ the services of said Stacie Loe as Accounting and Human Resources Coordinator of the Hibbing Public Utilities Commission; and

WHEREAS, it is the desire of the Commission of the Hibbing Public Utilities Commission, hereinafter called "Commission", to provide certain benefits, establish certain conditions of employment and to set working conditions of said Employee; and

WHEREAS, it is the desire of the Commission to (1) secure and retain the services of Employee and to provide inducement for her to remain in such employment, (2) to make possible full work productivity by assuring Employee's morale and peace of mind with respect to future security, (3) to act as a deterrent against malfeasance or dishonesty for personal gain on the part of the Employee, and (4) to provide a just means for terminating Employee's services at such time as she may be unable fully to discharge her duties or when Employer may otherwise desire to terminate her employ; and

WHEREAS, Employee desires to be employed as Accounting and Human Resources Coordinator of the Hibbing Public Utilities Commission.

NOW, THEREFORE, in consideration of the mutual covenants herein contained, the parties agree as follows:

SECTION 1. DUTIES

Employer hereby agrees to employ Stacie Loe as Accounting and Human Resources Coordinator of said Employer to perform the powers and duties specified by the Commission, as amended from time to time, and to perform other legally permissible and proper duties and functions as the Commission shall from time-to-time assign.

SECTION 2. TERM

A. Nothing in this agreement shall prevent, limit, or otherwise interfere with the right of the General Manager with notice to the Commission to terminate the services of Employee at any time, subject only to the provisions set forth in Section 3 of this agreement.

B. Nothing in this agreement shall prevent, limit or otherwise interfere with the right of the Employee to resign at any time from her position with Employer, subject only to the provision set forth in Section 4, paragraph C, of this agreement.

C. The employee agrees to remain exclusively employed by employer until December 31, 2021. Employee shall neither accept other employment nor become employed by any other employer during the term of the agreement, unless said termination date is affected as provided herein.

D. In the event written notice is not given by either party to this agreement to the other forty-five (45) days prior to termination date as herein above provided, this agreement shall be extended on the same terms and conditions as herein provided, all for an additional period of one (1) year. Said agreement shall continue thereafter for one (1) year periods unless either party does not wish to extend this agreement for an additional one (1) year term.

SECTION 3. SUSPENSION

Employer may suspend the Employee with full pay and benefits at any time during the term of this agreement.

SECION 4. TERMINATION AND SEVERANCE PAY

A. Employee acknowledges and understands that she serves at the pleasure of the Commission and General Manager, and the Commission and General Manager at any time with or without cause may terminate her employment. In the event Employee is terminated by the Commission or General Manager before expiration of the aforesaid term of employment and during such time that Employee is willing and able to perform her duties under this agreement, then in that event Employer agrees to pay Employee severance pursuant to what is outlined in the Management Compensation Package, which is attached hereto and made a part hereof; provided, however, that in the event Employee is terminated because of her conviction of any illegal act involving personal gain to her, then, in that event, Employer shall have no obligation to pay the aggregate severance sum designated in this paragraph. Any severance pay that Employee receives under this Section shall be in complete satisfaction of the Commission's obligations to Employee.

B. In the event Employer at any time during the term of this agreement reduces the salary or other financial benefits of Employee in a greater percentage than an applicable across-the-board reduction for all employees of Employer, or in the event Employer refuses, following written notice, to comply with any other provision benefiting Employee herein, or the Employee resigns following a suggestion, whether formal or informal, by the Commission that she resign, then, in that event, Employee may, at her option, be deemed to be "terminated" at the date of such reduction or such refusal to comply within the meaning and context of the herein severance pay provision.

C. In the event Employee voluntarily resigns her position with Employer before expiration of the aforesaid term of this employment, then Employee shall give Employer forty-five (45) days' notice in advance, unless the parties otherwise agree.

SECTION 5. DISABILITY

If Employee is permanently disabled or is otherwise unable to perform her duties because of sickness, accident, injury, mental incapacity or health for a period of twelve (12) successive weeks beyond any accrued sick leave, the Employer shall have the option to terminate this agreement, subject to the severance pay requirements of Section 4, paragraph A. However, Employee shall be compensated for any accrued sick leave, vacation, holidays, compensatory time and other accrued benefits as set forth in the Management Compensation Package attached hereto and made a part hereof.

SECTION 6. SALARY

Employer agrees to pay Employee for her services rendered pursuant hereto an annual base salary of $57,000 beginning at the commencement of her employment which will be September 7, 2021, payable in installments at the same time as other employees of the Employer are paid. Thereafter employee will have her wage review in the normal annual review cycle. The date of employment will be September 7, 2021.

In addition, Employer agrees to increase said base salary and/or other benefits of Employee in such amounts and to such extent as the Commission may determine that it is desirable to do so on the basis of an annual salary review of said Employee made at the same time as similar consideration is given other employees generally. Any change in salary or other terms of this agreement will be accomplished by amendment, as agreed upon by Employer and Employee.

SECTION 7. PERFORMANCE EVALUATIONS

A. The Commission shall review and evaluate the performance of the Employee 6 months after she commences employment. In light of a favorable evaluation, the Employee's salary shall be reviewed.

B. Additionally, the Commission shall review and evaluate the performance of the Employee in November or December of each year. Said review and evaluation shall be in accordance with specific criteria developed jointly by Employer and Employee. Said criteria may be added to or deleted from as the Commission may from time to time determine, in consultation with the Employee. Said Employee review shall be conducted pursuant to the laws of the State of Minnesota.

C. Annually, the Commission and Employee shall define such goals and performance objectives which they determine necessary for the proper operation of the Utility and in the attainment of the Commission's goals and objectives. They shall generally be attainable within the time limitations as specified and the annual operating and capital budgets provided.

D. In effecting the provisions of this Section, the Commission and Employee mutually agree to abide by the provisions of applicable law.

SECTION 8. HOURS OF WORK

It is recognized that Employee must devote time outside the normal office hours to business of the Employer.

SECTION 9. USE OF AUTOMOBILE

Employee shall be able to use an Employer vehicle for approved Employer related travel.

SECTION 10. VACATION

Employee shall be provided 120 hours of vacation and may be used for years one through nine and then to follow the Management Compensation Package as attached hereto and made a part hereof.

SECTION 11. DISABILITY, HEALTH AND LIFE INSURANCE

A. Employer agrees to put into force life insurance, disability insurance and health insurance with the same insurance companies Employer has for other general employees of the Employer. Any employee contribution to the health insurance provided by employer shall be paid by employee in the same amount as others generally employed at the Utility. Unless otherwise stated in this agreement, employee will receive the same benefits as the rest of the employees of Employer.

B. If requested by employer, employee agrees to submit once per calendar year to a complete physical examination by a qualified physician practicing in Hibbing, Minnesota, selected by the Employee, the cost of which shall be paid by the Employer. The Chairperson of the Commission shall receive a copy of all medical reports related to said examination, if said reports are requested by a majority of the Commission.

SECTION 12. RETIREMENT

Employer agrees to include employee in the same retirement programs offered others employed at the Hibbing Public Utilities Commission.

SECTION 13. PROFESSIONAL DEVELOPMENT

A. Employer hereby agrees to pay the travel and subsistence expenses of Employee for professional and official travel, meetings, and occasions adequate to continue the professional development of Employee and to adequately pursue necessary official and other functions for Employer.

B. Employer also agrees to budget and to pay for the travel and subsistence expenses of Employee for short courses, institutes and seminars that are necessary for his professional development and for the good of the Employer.

SECTION 14. GENERAL EXPENSES

Employer recognizes that certain expenses of a nonpersonal and generally job-affiliated nature are incurred by Employee, and hereby agrees to reimburse or to pay said general expenses upon receipt of duly executed expense or petty cash vouchers, receipts, statements or personal affidavits. Said expenses will be submitted to the General Manager for review and approval.

SECTION 15. INDEMNIFICATION

Employer shall defend, save harmless and indemnify Employee against any tort, professional liability claims or demand or other legal action, whether groundless or otherwise, arising out of an alleged act or omission occurring in the performance of Employee's duties as Controller. Employer will compromise and settle any claim or suit and pay the amount of any settlement or judgment rendered thereon.

SECTION 16. BONDING

Employer shall bear the full cost of any fidelity or other bonds required of the Employee under any law or ordinance.

SECTION 17. OTHER TERMS AND CONDITIONS OF EMPLOYMENT

A. The Commission, in conjunction with the General Manager, shall fix by amendment any such terms and conditions of employment, as it may determine from time to time, relating to the performance of Employee, provided such terms and conditions are not inconsistent with or in conflict with the provisions of this agreement, the City Code or any other law.

B. All provisions of the City Code, and regulations and rules of the Employer relating to vacation and sick leave, retirement and pension system contributions, holidays and other fringe benefits and working conditions as they now exist or hereafter may be amended, also shall apply to Employee as they would to other employees of Employer, in addition to said benefits enumerated specifically for the benefit of Employee except as herein provided.

SECTION 18. NO REDUCTION OF BENEFITS

Employer shall not at any time during the term of this agreement reduce the salary, compensation or other financial benefits of Employee, except to the degree of such a reduction across-the-board for all employees of the Employer.

SECTION 19. NOTICES

Notices pursuant to this agreement shall be given by deposit in the custody of the United States Postal Service, postage prepaid addressed as follows:

(1) EMPLOYER: Hibbing Public Utilities Commission
1902 East Sixth Avenue
Hibbing, Minnesota 55746

(2) EMPLOYEE: Stacie Loe

Alternatively, notices required pursuant to this agreement may be personally served in the same manner as is applicable to civil judicial practice. Notice shall be deemed given as of the date of personal service or as of the date of deposit of such written notice in the course of transmission in the United States Postal Service.

SECTION 20. GENERAL PROVISIONS

A. The text herein shall constitute the entire agreement between the parties.

B. This agreement shall be binding upon and inure to the benefit of the heirs at law and executors of Employee.

C. This agreement shall become effective upon signature by all parties, and the employee passing the employer's required physical, drug and alcohol test and background check.

D. If any provision, or any portion thereof, contained in this agreement is held unconstitutional, invalid or unenforceable, the remainder of this agreement, or portion thereof, shall be deemed severable, shall not be affected and shall remain in full force and effect.

E. This Agreement and any appendices or amendments to either shall be construed, and the rights of the parties shall be determined, in accordance with the laws of the State of Minnesota. The venue for any subsequent disputes shall be determined in the District Court (Hibbing Courthouse), County of St. Louis, State of Minnesota.

IN WITNESS THEREOF, the Hibbing Public Utilities Commission, Hibbing, Minnesota, has caused this agreement to be signed and executed on its behalf by its Vice Chair and Secretary of the Commission, and duly attested, and the Employee has signed and executed this agreement, both in duplicate, or in the alternative, parties may use electronic means as well as facsimile copy of the agreement to effect signature.

For Employer:

_____, _____
Vice Chair Date

_____, _____
Secretary Date

ATTEST:

_____, _____
Name Date

For Employee:

_____, _____
Stacie Loe Date

ATTEST:

_____, _____
Name Date

Hibbing Public Utilities

Management Compensation Package

A. Management Positions

The management positions covered under this agreement are:

- General Manager
- Director of Power Production
- Director of Electrical Systems
- Director of Utility Operations
- Director of Finance/Commission Secretary
- Safety/Environmental Coordinator
- Accounting/Human Resources
- Purchasing Supervisor
- Administrative Assistant

B. Holidays

The holidays granted to management personnel shall be the same as those granted to all other employees of the Public Utilities Commission, including personal leave (includes one (1) additional personal day in 1998, only).

C. Vacation

The vacation schedule for all management personnel shall be as follows:

Years of Service	Vacation Days
0-5	15 working days
6	16 working days
7	17 working days
8	18 working days
9	19 working days
10	20 working days
11-19	21 working days
20	31 working days

Up to ten (10) days of vacation may be carried over from the previous years' unused vacation (not accumulative). Management personnel may take vacations or compensatory leave time in full days; ½ days, or 2 hours increments. However, only one (1) two (2) hour increment is allowed in a work week.

D. Sick Leave

All management personnel shall accrue sick leave at a rate of 6.5 hours per pay period, as all other employees.

E. Disability Income Insurance

For all management employees, the Commission will provide Disability Income Insurance Protection as to all other employees.

Each management personnel will receive a maximum accumulated sick leave benefit of 180 days, as all other employees, which would be coordinated with the 90-day elimination period of the policy and the employee's monthly salary to afford the management employees full income protection until the exhaustion of his/her accumulated sick leave entitlements.

F. Retirement Severance

On retirement from the Public Utilities Commission under the PERA basis or coordinated plan, management personnel shall be paid a retirement severance consisting of the following:

1) Unused vacation time.
2) One-half of unused sick leave time accumulated.

G. Quit or Termination Severance

On termination of employment other than retirement under PERA, management personnel who give at least one (1) month's written notice shall be paid severance pay which will consist of the present cash value of his/her unused vacation time and one-half (½) of the present cash value of his/her unused accumulated sick leave. Employees hired after January 1, 1985, shall be required to have 10 years of service to receive the above sick leave cash value.

H. Workers Compensation

The Commission will provide Worker's Compensation Insurance for all management personnel as required by M.S.A. 268.11, Subdivision 3 and any other applicable law, rule or regulation.

I. Jury Duty

The Commission shall supplement the compensation of all management personnel on jury duty so that their total compensation will be the same as if they had been working and paid at their regular rate.

J. Longevity Payments

1) The longevity payment schedule granted to management personnel shall be the same as that granted to all other employees of the Public Utilities Commission based upon years of service.
2) For any exempt employees hired after January 1, 2015 Section L is not available and removed from HPU paid benefits for management (exempt) employees.

K. Medical Insurance

The Commission will provide hospitalization, surgical, medical, and dental insurance for all management personnel, active or retired, as provided to all other employee of the Public Utilities Commission. Employees hired after January 1, 1985 will receive above insurances after retirement same as all other employees hired after January 1, 1985.

L. Life Insurance

All active management personnel will be provided with a group term life insurance policy equal to annual salary rounded to the nearest $5,000; and upon retirement, shall receive a $1,500 paid up group life insurance policy.

M. Sick Leave Bonus

1) The Sick Leave Bonus payment schedule granted to management personnel shall be the same as granted to all other employees of the Public Utilities Commission.
2) For any exempt employees hired after January 1, 2015 Section M is not available and removed from HPU paid benefits for management (exempt) employees.

N. Compensatory Time

Management may earn up to 40 hours of compensatory time (no cashing out allowed) per year on the extra time worked on emergencies and taken as vacation time is taken. This compensatory time must be taken by December 31st of the year (no carry over allowed).

Emergency definition: a sudden, urgent, usually unexpected occurrence or occasion requiring immediate action.

O. **Flextime Policy**

1) Hibbing Public Utilities is committed to providing exempt employees with increased flexibility with their work schedule while allowing HPU to maintain a progressive and productive work environment. Alternative work scheduling is an opportunity to maintain exempt employee productivity.
2) HPU exempt employees will be considered for alternative work scheduling on a case-by-case basis to serve HPU as a whole with increased productivity at no expense to quality output.
3) HPU exempt employees are expected to work or use an employer provided benefit pay for 80 hours per pay period.
4) Full-time exempt employees who have completed at least six months of employment are eligible for flextime. The exempt employee must first discuss possible flextime arrangements with his/her supervisor and then submit a written request to their manager.
5) Flextime at Hibbing Public Utilities is a work schedule with time of arrival and departure that differs from the core business hours of 9:00 a.m. to 3:00 p.m. for exempt employees. The General Manager will approve the alternative work schedule for exempt employees.

P. **Temporary Telecommuting Policy and Procedure**

1) Temporary telecommuting arrangements may be approved for circumstances such as inclement weather, special projects, or business travel. These arrangements are approved by the General Manager on an as-needed basis only, with no expectation of ongoing continuance.
2) To be eligible employees requesting temporary telecommuting arrangements must be employed with Hibbing Public Utilities for a minimum of 12 months of continuous regular employment, must have a satisfactory performance record, be classified as an exempt employee (management), and job responsibilities or the specific work task(s) are deemed appropriate for temporary telecommuting.
3) Other informal, short-term arrangements may be made for employees on family or medical leave to the extent practical for the employee and the organization and with the consent of the employee's health care provider, if appropriate.
4) All temporary telecommuting arrangements are made on a case-by-case basis, focusing first on the business needs of the organization.
5) The employee must determine any tax or legal implications under IRS, state and local government laws, and/or restrictions of working remotely. Responsibility for fulfilling all obligations in this area rests solely with the employee.
6) Consistent with the HPU expectations of information security for employees working at the office, telecommuting employees will be expected to ensure the protection of proprietary company and customer information accessible. Steps include the use of locked file cabinets and desks, regular password maintenance, and any other measures appropriate for the job and the environment.

Q. **Meeting Meal Allowance**

Management must fill out an expense report with whom was present for the meal/meeting and what was discussed along with the meal receipt.

R. **Random Drug Testing**

Management personnel will be subject to random drug testing as provided for in HPUC employee policy EMPL114.

S. **Health Care Savings Plan (HCSP)**

Effective January 1, 2015, and for a period of not less than two years from that date, all Management Personnel that retire within the timeframe between January 1, 2015 and December 31, 2016, will be enrolled in a Health Care Savings Plan. This new Management Policy only affects Non-Union employees hired after February 1, 1985. The Funding Source for this HCSP will consist of one-half of unused Sick Leave at the time of retirement. These funds will be deposited in the Manager's HCSP tax-free and can be used in retirement to pay for any Eligible Medical Expenses including health insurance premiums. These funds are also tax-free when withdrawn for these eligible expenses.

PUBLIC UTILITIES COMMISSION
OF THE CITY OF HIBBING

_____
, Commission Chair

_____
, Secretary

_____
, General Manager

_____
Date

Hibbing Public Utilities

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PUBLIC UTILITIES COMMISSION
OF THE CITY OF HIBBING

_____
, Commission Chair

_____
, Secretary

_____
, General Manager

_____
Date

Hibbing Public Utilities

HIBBING PUBLIC UTILITIES COMMISSION

1902 E 6TH AVE
HIBBING, MINNESOTA 55746-0249

TELEPHONE 218-262-7700
FAX 218-262-7702

August 24, 2021

Patrick Garrity
Commission Chairperson
1902 E. 6th Ave.
Hibbing, MN 55746

Re: Updated Risk Management Plan and Fall Work Schedule

Dear Commissioners,

Insurance Update
HPU has completed a majority of items on the previous Risk Management Plan with FM Global and we are heading into Fall with a renewed focus on closing out these remaining items. To match with HPU's focus and operations direction, FM has revised the Risk Management Plan to reflect the changing operations. The items on the updated list list are:

- Transmit testing of the boiler master fuel trips and combustion controls every
- Continue developing new operator training and refresher training programs.
- Formalize procedure and training for startup and warm up of equipment
- Formalize annual, monthly maintenance and safety checks
- Develop TestplantAtwood Morrill and Cochrane steam safety/relief valves associated with turbines.
- Formalize foreign material exclusion (FME) program documentation.
- Provide sprinklers for the cooling tower.
- Provide sprinklers over the conveyor below the Biomass Storage Building.

HPU is making good progress on all of these items and I look forward to completing these items this fall ahead of both FM's fall site visits as well as any other insurance company that will be visiting HPU as we plan rebid our plant insurance for the 2022 year.

Fall Schedule
In addition to the insurance items above, the priority for the Fall will be a gradual ease into resuming wood operations, starting with planned test fires before the end of August on Boiler 4, Performance Test the week of September 13th, and Demolition / Construction of the cooling towers starting September 20th. See attached project plan noting the work completed and on-going for the power plant.

Sincerely,

HIBBING PUBLIC UTILITIES COMMISSION

Luke J. Peterson,
General Manager

LJP/plr
cc: Commission
A. Borland/File: commission/08 24 2021 Barr Eng Svcs.doc

Hibbing Public Utilities

HIBBING PUBLIC UTILITIES COMMISSION

1902 E 6TH AVE
HIBBING, MINNESOTA 55746-0249

TELEPHONE 218-262-7700
FAX 218-262-7702

August 24, 2021

Patrick Garrity
Commission Chairperson
1902 E. 6th Ave.
Hibbing, MN 55746

Re: Customer Disconnection Notices and HPU Efforts to Assist

Dear Commissioners,

As of the middle of August, costumer past due accounts totaled $1.3 million dollars including electric, water, gas, steam as well as sewer and garbage charges from the City. This amount has come down from the $1.7 million owed in June. However, serious efforts need to be made by many HPU customers to avoid disconnection.

Per the Commission policy adopted in May, the normal collection arrangements, up to and including service disconnection, will resume in September. HPU has offered to accept payment arrangements that will help customers get caught up with their bills in a way they can afford. So far HPU has accepted 32 payment arrangements totaling approximately $136,000.

HPU has also enlisted the support of Rene Hugger from Smart Savings and Spending to assist applicants who need help through the process of applying for assistance and setting up a payment arrangement. Many customers report that they were so overwhelmed with the amounts they owe that even beginning to think of applying for assistance has been the hardest part. Customers who have talked with Renee are taking the first step to come out of the pandemic slump with dignity and a reliable payment arrangement.

I will be available for discussion at the August 24, 2021 regular Commission meeting.

Sincerely,

HIBBING PUBLIC UTILITIES COMMISSION

Luke J. Peterson

Luke J. Peterson,
General Manager

LJP/plr
cc: Commission
A. Borland
File: commission/08 24 2021 Cooling Tower Fire Suppression System.doc