

# Staff Report

For the Regular Meeting of the Board of Directors, June 26, 2019

**TO:** Board of Directors

**FROM:** Gary D. King, PE, PhD, Engineering Manager  
Adrian Schneider, PE, Senior Engineer

**DATE:** June 19, 2019

**SUBJECT:** Chicago Park Powerhouse Fire Protection System Upgrade  
(FATR #2164)

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***ENGINEERING***

**RECOMMENDATION:**

Award a design and construction contract to Sabah International for the Chicago Park Powerhouse Fire Suppression System Upgrade in the amount of \$258,680, and authorize the General Manager to execute the necessary documents.

**BACKGROUND:**

The Chicago Park Powerhouse was built in 1964 and included a CO<sub>2</sub> fire suppression system that provided protection for the generator. The inoperative CO<sub>2</sub> system is outdated and not up to current standards and codes. This project includes replacement of the outdated CO<sub>2</sub> fire suppression system for the generator, the addition of a fire suppression system for the control room, and a fire detection system for the powerhouse cable tray areas.

In 2018 and 2019, District staff conducted an assessment of the status of the general fire protection system of the Chicago Park powerhouse. Although this focused on the type of system (CO<sub>2</sub>, Sprinkler, etc.), it also took a global approach to the District's fire protection of its powerhouses. The powerhouses were built decades ago, and the fire protection systems are outdated, and many are inoperative. A summary ranking system was developed that indicated the needs and priorities for a type of fire protection system that will protect the powerhouse (attached).

The outcome of the summary indicated that a CO<sub>2</sub> system was preferred for the primary protection of the powerhouse generator enclosure. The summary also indicated that the implementation of other items are necessary and included mitigations and the need for a Fire Protection Plan for the interior of the facility.

On March 13, 2019, the District requested proposals (RFP) from five fire suppression companies to provide design and installation for fire suppression and detection systems for the Chicago Park Powerhouse. The RFP was sent to ORR Protection Systems Inc. (ORR), Sabah International (Sabah), Intelligent Technologies and Services Inc. (Intelli-tech), Western States Fire Protection Co., and GHD.

Bidding was done in compliance with District Policy #3080, revised and approved by the Board on June 27, 2018. The contract documents were approved by the Board on July 25, 2018.

The District received quotes on April 12, 2019, from ORR, Sabah, and Intelli-tech. Due to the varied formats and responses in the individual quotes, discussions focused on the two lowest quotes; ORR and Sabah. Sabah revised their proposal on May 8, 2019, based on the District's request for clarification on Sabah's approach to the project.

As an additive item to their original quote, Sabah provided an additional remote alarm display at the entrance to the hydroelectric facility for \$8,680. Staff believes this is needed from a safety standpoint. This item was not provided by the other companies.

The following are the quotes from the three companies that submitted proposals:

<u>Contractor</u>	<u>Total</u>
ORR Protection	\$226,473
Sabah International	\$258,680
Intelli-tech	\$323,672

The bids and approaches provided by each company were carefully reviewed by the District. The quotes were reviewed independently by five staff members and discussed at a meeting. Included with the review was a scoring criteria that was followed and cumulated to a final score for the three contractors (attached). Sabah had the most relative and extensive project experience related to hydro facilities. Sabah is also based locally and would provide a faster response time than the other two companies. District staff has also worked on past projects with Sabah and have had very favorable experiences.

Evaluation of the proposals are based on a qualitative (ability to meet the scope) and quantitative (money) basis. Thus, the District can choose a higher quote should it determine that it provides superior quality and suitability to District needs, as well as professional excellence and relevance of completed work. Based on the thoroughness of Sabah's approach and bid response, staff recommends that the Board award the design and construction contract to Sabah International in the amount of \$258,680. Staff's recommendation is also supported by the outcome of the scoring criteria that shows Sabah having the highest percentage score of the three contractors.

This project directly relates to Goal numbers 1 and 3 of the District's Strategic Plan to strengthen reliability and redundancy of facilities.

**BUDGETARY IMPACT:**

\$258,680 of the project funding will fall under the Hydro Powerhouse Improvement program (50112-52920) with a 2019 budget of \$1,865,000. Currently, there is \$1,690,000 unencumbered in this budget. After commitment (award) of this project, \$1,431,320 will remain in the budget.

## Attachments:

- Fire System Ranking Summary
- Proposal Scoring Sheet

## SCORING SUMMARY

### Chicago Park Powerhouse Fire Suppression System

#### REVIEWER'S SCORING (5-highest score, 1-lowest score)

Item	Description		Company		
			Sabah International	Intelli-tech	ORR Projection Systems
A	Overall Company's capabilities, expertise, related experience, references and size of staff - <b>20% of Total Score</b>	Reviewer 1	5	3	2
		Reviewer 2	4	3	3
		Reviewer 3			
		Reviewer 4	4	2	2
		Reviewer 5	5	2	4
		<b>Averaged Total</b>	<b>4.5</b>	<b>2.5</b>	<b>2.8</b>
B	Design team's related experience, references, qualifications, expertise, and past performance with fire system design & regulations - <b>25% of Total Score</b>	Reviewer 1	4	3	3
		Reviewer 2	5	2	2
		Reviewer 3	4	2	2
		Reviewer 4	4	2	3
		Reviewer 5	5	2	4
		<b>Averaged Total</b>	<b>4.4</b>	<b>2.2</b>	<b>2.8</b>
C	Understanding of the project's needs by reviewing the proposed work item task listing, schedule, and proposal response & thoroughness - <b>25% of Total Score</b>	Reviewer 1	4	3	3
		Reviewer 2	4	3	3
		Reviewer 3	4	2	2
		Reviewer 4	4	3	3
		Reviewer 5	5	2	3
		<b>Averaged Total</b>	<b>4.2</b>	<b>2.6</b>	<b>2.8</b>
D	Present work load and ability to meet the time Schedule requirements – indicate staff commitment to this project - <b>10% of Total Score</b>	Reviewer 1	3	3	3
		Reviewer 2	3	3	3
		Reviewer 3	3	3	3
		Reviewer 4			
		Reviewer 5	3	3	3
		<b>Averaged Total</b>	<b>3.0</b>	<b>3.0</b>	<b>3.0</b>
E	Cost of Project - <b>20% of Total Score</b>	Quote	\$258,680	\$323,672	\$226,473
		<b>Total of 20%</b>	<b>18%</b>	<b>14%</b>	<b>20%</b>

#### FINAL PERCENTAGE SCORES

Item	Description	Highest Total Possible Score	Sabah International	Intelli-tech	ORR Projection Systems
A	Overall Company's capabilities, expertise, related experience, references and size of staff	<b>20%</b>	18%	10%	11%
B	Design team's related experience, references, qualifications, expertise, and past performance with fire system design & regulations	<b>25%</b>	22%	11%	14%
C	Understanding of the project's needs by reviewing the proposed work item task listing, schedule, and proposal response & thoroughness.	<b>25%</b>	21%	13%	14%
D	Present work load and ability to meet the Time Schedule requirements - indicate staff commitment to this project	<b>10%</b>	6%	6%	6%
E	Cost of Project	<b>20%</b>	18%	14%	20%
<b>Total Percentage Score</b>		100%	<b>85%</b>	<b>54%</b>	<b>65%</b>

## HYDROELECTRIC FIRE SYSTEM TYPE RANKING SUMMARY

System Type	<sup>(1)</sup> System Status Rating					<sup>(2)</sup> System Changes with Mitigation Implementation							
	Human Health Risk	Equipment Damage Risk	Capital Cost	Complexity-Maintenance	INITIAL RANKING SCORE	*Fire Plan & Procedure <sup>(3)</sup>	*Emergency Lights <sup>(4)</sup>	*External Disconnect <sup>(5)</sup>	Portable Emergency O <sub>2</sub> Supply <sup>(6)</sup>	Delayed System Start	Signage	Score Change w/ Mitigation	FINAL RANKING SCORE
No System Alternative	5	5	5	0	15	Y	Y	Y	Y	Y	N	11	7
CO <sub>2</sub>	4	1	1	2	8	Y	Y	Y	Y	Y	Y	6	1
Water Sprinkler	1	4	1	1	7	Y	Y	Y	N	N	Y	7	2
Mist	1	3	2	2	8	Y	Y	Y	N	N	Y	8	3
Hybrid Mist-Gas	2	2	3	4	11	Y	Y	Y	N	N	Y	10	4
Inert Gas	3	1	3	4	11	Y	Y	Y	Y	Y	Y	12	5/6
Chemical	3	1	3	4	11	Y	Y	Y	Y	Y	Y	12	5/6

### <sup>(1)</sup> Relative Ranking Criteria

#### Human Health

- 1 Low Risk (no fatality potential)
- 3 Medium Risk (very low fatality risk)
- 5 High Risk (fatality risk, depending on controls and fire protection plan/response)

#### Equipment Damage

- 1 Low Damage Event - Low Cost for Repair/Replacement/Minimal Downtime
- 3 Medium Damage Event - Medium Costs for Repair/Replacement/Moderate Downtime
- 5 Maximum Damage Event - Highest Costs for Overhaul/Replacement/Significant Downtime

#### Capital Costs

- 1 Low Cost (cost of lowest new fire system as compared to highest fire system)
- 3 Medium Cost (cost of new fire system compared to max cost of unit replacement)
- 5 Maximum Cost (total unit replacement (generator, electronics, electrical wire, etc))

#### Complexity/Maintenance

- 1 Low Maintenance - Minimal yearly upkeep/testing/certification - Internal
- 3 Medium Maintenance - Moderate yearly maintenance & certification; may need outside company
- 5 High Maintenance - Yearly maintenance requiring certification by outside company to maintain warranty

### Additional Requirements

- Fire Response Plan
- Backup Systems (Rebreathers/Mini SCBAs)
- System Protection

<sup>(2)</sup> "Y" = Yes for improvement and reduction in Health Risk to 2 or 1. "N" = No change in Health Risk system ranking

\* Must be installed regardless of system choice

<sup>(3)</sup> Includes turning off CO<sub>2</sub> system when entering confined space.

<sup>(4)</sup> Battery powered; automatically turn on when plant power shuts off

<sup>(5)</sup> For all Plant Power

<sup>(6)</sup> Self contained oxygen tanks that are worn on employees when entering confined spaces