

**PORT OF SEATTLE**  
**MEMORANDUM**

**COMMISSION AGENDA**

**Item No.** 5a

**Date of Meeting** July 26, 2011

**DATE:** July 19, 2011

**TO:** Tay Yoshitani, Chief Executive Officer

**FROM:** David Soike, Director, Aviation Facilities and Capital Program  
Wayne Grotheer, Director, Aviation Project Management Group

**SUBJECT:** Temporary Backup Power at Seattle-Tacoma International Airport (WP 104570)

**Amount of This Request:** \$3,100,397

**Source of Funds:** Airport Development Fund

**State and Local Taxes Paid:** \$235,000

**Jobs Created:** 32

**ACTION REQUESTED:**

Request Commission authorization for the Chief Executive Officer (CEO) to (1) update and complete design and provide construction support using an existing indefinite delivery/indefinite quantity contract; (2) execute one-year contracts, with options to renew for four one-year periods, to lease or purchase nine two-megawatt generators and associated equipment and material; (3) advertise and execute a major construction-project-specific, unit-price contract; and (4) authorize utilization of Port Forces for the Seattle-Tacoma International Airport (Airport) Temporary Backup Power Project, for a total project authorization of \$3,100,397. Fuel for generators will be procured under an existing open order contract.

**SYNOPSIS:**

This project continues a practice begun in late 2009 and will allow the installation of nine two-megawatt diesel generators to supply full Airport electrical power needs in the event of disruption of electrical power from Puget Sound Energy (PSE). Five generators will be installed at the South Main Substation (SMS) and four generators will be installed at the North Main Substation (NMS) as shown on Attachment A. Installation includes transformers, switchgear, cabling, fuel tanks, control equipment, remote metering, trailers to house control equipment, fencing, fuel systems, and initial fueling to be completed by November 2011 with demobilization of each facility by April 2012. Funding for the final two months of 2011 is included in the previously approved annual operating budget, while funds for 2012 will be included in the budget process this fall. The costs for this project will be recovered through electricity rates to airport tenants. This project has been approved by the airlines.

**BACKGROUND:**

In 2009, the United States Army Corps of Engineers (USACE) discovered flaws in the Howard Hanson Dam that required the lowering of the pool to ensure dam integrity. At the time, the

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USACE noted that the risks associated with the dam would last up to five years. Subsequently, the USACE have made modifications to the dam such that the risk of failure is about 1 in 60 this winter. As a result, during the winter season storms, water may have to be released to the Green River and threaten breach of the dikes. Should this occur, PSE facilities could be at risk of damage/failure resulting in a loss of power to the Airport.

On October 15, 2009, a Declaration of Emergency was declared by the CEO and a project was initiated to install temporary backup power in the event of power loss. By early December, all nine generators and the attendant equipment were installed and were ready to activate if needed. The system was never activated as PSE electrical power was maintained all winter. That system was demobilized in April 2010.

On July 22, 2010, after reviewing the USACE assessment of the dam and the Green River dikes, reviewing additional mitigation work performed by PSE, and studying weather forecasts for the 2010 to 2011 winter, the airlines understood the need to install the temporary backup power system again that winter, as a precaution against power interruption due to flooding or other hazards. In October 2010, the system was installed again, and in March 2011 was removed; however, the site work and cabling remained for use again this season.

For the 2011 to 2012 winter, staff is attempting to have the system operational by November 1, 2011, the approximate start of seasonal heavy rains and winter season storms. This request is for the expense funds needed in 2011 (\$1,528,325) and in 2012 (\$1,572,072) to install and lease the equipment, purchase enough fuel to test the system, and run it for approximately eight hours. This request does not include the cost of fuel to run the system for an extended period should storm or dam situations warrant it. Those costs, if incurred, will be approximately \$92,000 per day of operation depending on cost of diesel fuel, however the fuel cost pales in comparison to business disruption impacts if the airport is without power for an extended period of time.

The Port intends to use an existing indefinite duration/indefinite quantity (IDIQ) contract to complete design requirements and provide construction support. The Port will competitively procure the generators and ancillary equipment – this equipment will be the same rated capacities as equipment for previous years. In addition the procurement contract will have options for future years and also a purchase option if a later determination is made to construct a year-round permanent facility rather than lease generators for a five month period as is planned again for this storm season. We estimate the cost of equipment to be \$1,951,293 for the 2011 to 2012 winter. Through the competitive process, the Port will have the option to lease (or purchase) the generators and ancillary equipment for 2011 to 2012, with an option to renew for four one-year periods.

Port Construction Services (PCS) will be utilized again this year to self-perform work in conjunction with a competitively procured major construction-project-specific, unit-price contract. Airport maintenance staffing will be used to provide all switching, monitor installation and testing, and operate the system when needed. The Port of Seattle will use an existing open-order contract to procure the diesel fuel.

The Airport's decision to install temporary backup power generation in 2009 also caused the airlines to evaluate the effect a serious power outage from Green River flooding or from any

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other major disruption would have on their operations. As a result, the Airport Airline Affairs Committee (AAAC) has expressed a willingness to consider installing a permanent electrical generating system at the SMS in the future. The AAAC is beginning a benefit-cost analysis in this regard. The scope and cost estimate for a future project has not been developed but would probably be in the range of \$30 million and take multiple years to permit, design, and construct. Staff will possibly seek a future Commission authorization for a permanent back-up power facility once Port and airline staff have performed an analysis.

### **PROJECT JUSTIFICATION:**

#### ***Project Objectives:***

- Provide 18 megawatts of continuous electrical power if needed.
- Reduce impacts to Airport operations during power interruption(s).
- Minimize down time if loss of electrical power occurs.
- Complete project on schedule and within budget.
- Utilize the same design documents from last year's project.
- Re-utilize as much salvaged material as possible from last year's project (cables, supports, etc.).

### **PROJECT SCOPE OF WORK AND SCHEDULE:**

#### ***Scope of Work:***

This project will provide all necessary equipment, material, and construction to provide temporary backup power to operate the Airport for an extended period if the main source of electrical power (PSE) is lost.

#### ***Schedule:***

- Complete Design August 2011
- Start Construction September 2011
- Project Completion November 2011
- Project Demobilization March 2012

### **FINANCIAL IMPLICATIONS:**

#### **Budget/Authorization Summary:**

Original Budget	\$3,100,397
Budget Transfers	\$0
Revised Budget	\$3,100,397
Previous Authorizations	\$0
Current request for authorization (2011 Expense Funds)	\$1,528,325
Total Authorizations, including this request	\$1,528,325
Remaining budget to be authorized (2012 Expense Funds)	\$1,572,072

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### **Project Cost Breakdown (This Authorization):**

Construction costs	\$1,123,325
Sales tax	\$130,000
Outside professional services	\$100,000
Aviation PMG and other soft costs	\$175,000
Total	\$1,528,325

### **Budget Status and Source of Funds:**

Project funding will be drawn from 2011 and 2012 Expense Funds.

This project will incur costs of \$1,528,325 in 2011 that were included in the Aviation Division 2011 expense budget. The 2012 costs of \$1,572,072 will be included in the 2012 expense budget. All costs will be incorporated into the electrical utility rates that are either metered and billed to tenants, or allocated to Aviation cost centers. Approximately 57% of electrical costs are included in airline rates and charges.

### **Previous Budget Summary:**

	Fall	Spring	
	Sept-Dec	Jan-June	Total
<b><u>2009/2010</u></b>			
Authorized	2,259,000	1,283,000	3,542,000
Spent	2,265,255	1,737,018	4,002,272
Variance	(6,255)	(454,018)	(460,272)
<b><u>2010/2011</u></b>			
Authorized	2,259,000	1,283,000	3,542,000
Spent	1,660,541	1,780,521	3,441,062
Variance	598,459	(497,521)	100,938
<b><u>2011/2012</u></b>			
Authorization Request	\$1,528,325	\$1,572,072	\$3,100,397

### **ENVIRONMENT AND SUSTAINABILITY:**

The project will ensure that the Airport continues to operate as a regional asset in the event of loss of electrical power from PSE.

### **STRATEGIC OBJECTIVES:**

#### ***Ensure Airport Vitality:***

The project provides enhanced reliability of electrical power at the Airport, which facilitates use of the Airport by the traveling public, airlines, and tenants.

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### **TRIPLE BOTTOM LINE SUMMARY:**

This project provides a cost-effective means of accomplishing necessary backup electrical power for critical Airport infrastructure. Without reliable electrical power, the Airport cannot operate to benefit our business customers, travelers, and the region.

### **ALTERNATIVES CONSIDERED AND THEIR IMPLICATIONS:**

Alternative 1: Install diesel generator sets and intended equipment to provide 18 megawatts of electrical power to keep the airport fully operational in the event of loss of electrical power from PSE. **This is the recommended alternative.**

Alternative 2: Do Nothing. In the event of loss of power from PSE, the Airport would stop operating. The shutdown might not be orderly. Passengers would be stranded and airlines and tenants would lose revenue. This is not the recommended alternative.

### **OTHER DOCUMENTS ASSOCIATED WITH THIS REQUEST:**

Attachment A – Two Site Maps Indicating Generators Locations at South and North Main Substations.

### **PREVIOUS COMMISSION ACTIONS OR BRIEFINGS:**

On October 20, 2009, there was a Commission briefing on an Emergency Declaration to Provide Backup Electrical Power at Seattle-Tacoma International Airport. Subsequently on August 24, 2010, there was a Commission briefing to Provide Backup Electrical Power at Seattle-Tacoma International Airport for fall 2010 to spring 2011.