



COMMISSION
AGENDA MEMORANDUM

Item No. 8g

ACTION ITEM

Date of Meeting March 11, 2025

DATE: February 27, 2025

TO: Stephen P. Metruck, Executive Director

FROM: Keri Stephens, Director AV Facilities & Capital Programs
Eileen Francisco, Director Aviation Project Management

SUBJECT: C801316 – Generator Controls Building Engineering Systems (BES) Design & Construction

Amount of this request: \$8,450,000

Total estimated project cost: \$9,400,000

ACTION REQUESTED

Request Commission authorization for the Executive Director to take all steps necessary, including the execution of all contracts, including Public Works, Alternative Public Work procedures in accordance with RCW.10, Good and Services, Personal Services, Professional Services, other consulting service and any other types of contracts or agreements to deliver the Generator Controls project. The amount of this request is \$8,450,000 for an estimated total project cost not to exceed \$9,400,000.

EXECUTIVE SUMMARY

This is a renewal and replacement project. The A Concourse and Combined Communications and Control Center (C4) generators provides back-up power to life safety items such as egress lighting, fire alarms, radio systems, evacuation elevators, exit doors, fire pumps, and the ACC, ECC, and 911 dispatch in the C4. The generators were initially installed during the South Terminal Expansion Project (STEP) in 2004 with controls provided by GE Fanuc Programmable Logic Controller (PLC). GE no longer produces or supports the Fanuc PLC therefore software upgrades and hardware are difficult to obtain. The Port has recently standardized using Allen Bradley PLCs. This project would replace the obsolete PLCs with the new standard.

JUSTIFICATION

The project is a regulatory requirement. Emergency power generation is required by the National Electrical Code (NEC) and the National Fire Protection Association (NFPA) for all life-safety systems. Replacing the generator controls mitigates the risk of an unexpected control failure and subsequent loss of emergency power.

Meeting Date: March 11, 2025

Diversity in Contracting

The project staff, in coordination with the Diversity in Contracting Department, evaluated the WMBE goals for the BES contract and determined a WMBE aspirational goal of 12% is appropriate.

DETAILS

The work detailed in this memo is to remove and replace the PLCs for the A Concourse and C4 generators.

Scope of Work

The Generator Controls Project will consist of:

- (1) Replacing all end-of-life GE Fanuc PLCs with new Allen Bradley PLCs
- (2) Integrate generator operation status and support systems into the Direct Digital Control (DDC) system for remote monitoring during disruptions.
- (3) Correct NFPA non-compliant issues in the generator rooms, including:
 - a. labeling, backup lighting, & service-rated panel for radiators fans and pumps

Schedule***Activity***

Commission design authorization	2025 Quarter 1
Design start	2025 Quarter 3
Commission construction authorization	2025 Quarter 1
Construction start	2026 Quarter 2
In-use date	2027 Quarter 3

Cost Breakdown

	This Request	Total Project
Design & Honorarium	\$257,000	\$1,207,000
Construction	\$8,193,000	\$8,193,000
Total	\$8,450,000	\$9,400,000

ALTERNATIVES AND IMPLICATIONS CONSIDERED

Alternative 1 – Defer project to a later date or cancel project

Cost Implications: Approximately \$200,000 would need to be expensed for previous work on the notebook development and basis of design.

Pros:

- (1) No further capital investment at this time.

Meeting Date: March 11, 2025

Cons:

- (1) Increase risk that a generator control could fail over time resulting in the loss of emergency power and a large capital expense to replace.
- (2) Potential for increased costs of materials and labor if deferred to a later date.

This is not the recommended alternative.

Alternative 2 – Replace the controls for the two generators as separate projects.

Cost Implications: Capital project investment of an estimated \$12 to \$14M for if executed as separate projects.

Pros:

- (1) Simplify projects to potentially increase the number of contract bidders.
- (2) Apply lessons learned from first project into the second project.
- (3) Correct NFPA noncompliance issues within the generator rooms
- (4) Achieve NEC compliance for both generators

Cons:

- (1) Increase project schedule
- (2) Increase capital investment
- (3) Mobilizing and demobilizing temporary emergency generator twice potentially impact other projects due to its location on the A Concourse apron.

This is not the recommended alternative.

Alternative 3 – Replace both generators' PLCs during one capital project

Cost Implications: Capital project investment of an estimated \$9,400,000.

Pros:

- (1) Mobilizing and demobilizing temporary emergency generator once, reducing the impact on other projects
- (2) Combined projects allow for greater efficiencies during design and construction.
- (3) Commissioning and construction activities overlap.
- (4) Correct NFPA noncompliance issues within the generator rooms
- (5) Achieve NEC compliance for both generators

Cons:

- (1) Requires capital investment

This is the recommended alternative.

Meeting Date: March 11, 2025

FINANCIAL IMPLICATIONS

<i>Cost Estimate/Authorization Summary</i>	Capital	Expense	Total
COST ESTIMATE			
Original estimate	\$10,535,000	\$0	\$10,535,000
Current change	(\$1,260,000)	\$125,000	(\$1,135,000)
Revised estimate	\$9,275,000	\$125,000	\$9,400,000
AUTHORIZATION			
Previous authorizations	\$950,000	\$0	\$950,000
Current request for authorization	\$8,325,000	\$125,000	\$8,450,000
Total authorizations, including this request	\$9,275,000	\$125,000	\$9,400,000
Remaining amount to be authorized	\$0	\$0	\$0

Annual Budget Status and Source of Funds

This project (C801316) was included in the 2025-2029 capital budget and plan of finance with a budget of \$10,535,000. A budget decrease of \$1,260,000 was transferred to the Aeronautical Allowance¹ CIP C800753 resulting in zero net change to the Aviation capital budget. The funding sources will be the Airport Development Fund (ADF) and revenue bonds.

Financial Analysis and Summary

Project cost for analysis	\$9,400,000
Business Unit (BU)	Terminal Building
Effect on business performance (NOI after depreciation)	NOI after depreciation will increase due to inclusion of capital (and operating) costs in airline rate base.
IRR/NPV (if relevant)	N/A
CPE Impact	\$0.02 in 2028

Future Revenues and Expenses (Total cost of ownership)

This project will likely have no impact on Aviation Maintenance operating & maintenance costs.

ATTACHMENTS TO THIS REQUEST

(1) Presentation

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

None

¹ The Aeronautical Allowance is included in the Capital Improvement Plan to ensure funding capacity for unspecified projects, cost increases for existing projects, new initiatives, and unforeseen needs. This ensures funding capacity for unanticipated spending within the dollar amount of the Allowance CIP.