

SHIP TO: RECEIVING SECTION: GUAM POWER AUTHORITY P.O. BOX 2977 HAGATNA, GUAM 96932 TELEPHONE: (671) 648-3054/55	PURCHASE ORDER  GUAM POWER AUTHORITY ATURIDÅT ILEKTRESEDÅT GUÅHAN P.O. Box 2977 Hagatna, Guam 96932 TELEPHONE: (671) 648-3054/5 FAX: (671) 648-3165	THIS PURCHASE ORDER NUMBER <u>34401</u> MUST APPEAR ON ALL INVOICES. PACKING SLIPS, PACKAGES, B/L, CORRESPONDENCE, ETC.	
SSTAINATON	JMMERFALEN <i>QST</i>	PO DATE 12/23/2025	JOB ORDER NO./OBJ 100512.107200.102

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Vendor Number: **5935884**

BATTELLE MEMORIAL INSTITUTE
PACIFIC NORTHWEST NATIONAL LABORATORY
P.O. BOX 999
ATTN: MARY FORAKER
SR. CONTRACTS SPECIALIST

TEL:
FAX:
EMAIL: mary.foraker@pnnl.gov

AUTHORITY: 3112
INVITATION NO.:
CONTRACT NO.:
TIME FOR DELIVERY:
COMPLETION:
EXPIRATION: 01/16/2028
DISCOUNT TERMS:
REQUISITION NO: 40287 OR

NO.	DESCRIPTION / SUPPLIER ITEM	QUANTITY	UNIT	UNIT PRICE	AMOUNT
AMENDMENT NO.: I			L		

Amend to make the following changes to the language:

FROM:
Sensor Data Analytics / Grid Monitoring and Analytics System (GMAS)
Demonstration Project

Ref.: Award No.: DE-OE0000987 Assistant Agreement
(Period of Performance: January 17, 2025 through January 16, 2028)
U.S. Department of Energy Order: DOE O 481.1E
Strategic Partnership Agreement No.: 83844
U.S. Department of Energy Letter dated April 03, 2024
Assistant General Manager, Engineering and Technical Services Memo dated October 03, 2025

PNNL Scope and Cost Share
- Federal Cost Share: \$330,500.00
- GPA Cost Share: None

Total: \$330,500.00

This project focuses on real-time monitoring using PMU data and cloud-based analytics with interoperability between control systems:

- IEEE 2664-based PMU streaming
- Event and oscillation detection tools
- CIM-based data structuring via GOSS middleware
- Secure web dashboards for visualization and situational awareness

Page 1 of 3

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TOTAL		<< DO NOT FILL THIS ORDER IF YOUR TOTAL COST EXCEEDS THIS TOTAL	
PAYOUT UPON RECEIPT OF MERCHANDISE IN GUAM IN GOOD CONDITION		SIGNATURE: <i>JM</i> 12/23/2025	
ACKNOWLEDGED BY: <i>Mary Foraker</i>	DATE: 12/24/2025	SIGNATURE: <i>JM</i> 12/23/2025	
SIGNATURE OF VENDOR RETURN TO PROCUREMENT DIVISION VIA FACSIMILE AT (671) 648-3165			
JOHN M. BENAVENTE, P.E., General Manager Date Delegated Authority			

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Technical Expertise Requirements:

- Cloud-based SCADA and PMU data integration platforms
- Real-time power system analytics using high-resolution synchrophasor data
- Interoperability using IEEE 2664, CIM, and GOSS middleware
- Development and deployment of oscillation detection, impedance monitoring, and digital twin simulation
- Digital twin development experience for islanded electrical power systems with substantial penetration of inverter based resources up to 100% instantaneous IBR supplied system generation.
- Familiarity with FFT-based signal processing, voltage angle unwrapping, and state estimation
- Secure data transfer protocols and cyber-secure architecture for utility grid systems
- Collaboration with national laboratories and familiarity with DOE grid modernization tools
- Deployment of operator-facing dashboards and PI System interfaces for situational awareness

Point of Contact:

Maria Aiza Galang, Engineer I, SPORD
Victor Torres, Engineer III, SPORD
Telephone No.: 671-648-3209

TO NOW READ:
PNNL PO 34401

The parties to the Agreement agree to be bound by the terms and conditions of Strategic Partnership Project Agreement (SPP) number 83844 and no terms or conditions of PO 34401 shall transfer to Battelle. The GPA purchase order 34401 is for invoicing purposes and the purchase document is internal to GPA.

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Project References

- DOE Award No. DE-OE0000987 Assistance Agreement - Defines the project and period of performance. DOE award No. DE-OE0000987 applies to GPA and no terms shall flow to Battelle
- DOE Order 481.1E - Authority for SPP contracting with national laboratories
- SPP Agreement No. 83844 (executed with PNNL) - Governing document for all terms and conditions
- U.S. DOE Letter dated April 3, 2024 - Used by Procurement to proceed with SPP contracting
- AGMETs Memo dated October 3, 2025 - Internal GPA justification for initiating the PO

Terms and Conditions

All contractual terms, project scope, invoicing procedures, and intellectual property rights are governed solely by Strategic Partnership Project Agreement No. 83844/82787 executed between GPA and PNNL.

This Purchase Order exists only to link SPP Agreement No. 82787 to GPA's internal audit and accounting system. No additional terms or conditions are created or implied.

Payment Terms

Invoicing and payment terms shall follow Appendix B of SPP Agreement No. 83844. GPA will process invoices NET 30 after receipt of original invoice, in accordance with SPP 83844.

REVIEWED BY: *J. Lynn C. Pangelinan* 12/23/2025
JAMIE LYNN C. PANGELINAN Date
JL Supply Management Administrator

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DATE: 12/24/2025		JOHN M. BENAVENTE, P.E., General Manager Date Delegated Authority	