

DEPARTMENT OF ENERGY**Notice of 229 Boundary for the Fort Saint Vrain Independent Spent Fuel Storage Installation**

AGENCY: Department of Energy (DOE).

ACTION: Notice of 229 Boundary for the Fort Saint Vrain (FSV) Independent Spent Fuel Storage Installation (ISFSI).

SUMMARY: Notice is hereby given that the U. S. Department of Energy, pursuant to Section 229 of the Atomic Energy Act of 1954, as amended, published in the **Federal Register** on August 26, 1963 (28 FR 8400), prohibits the unauthorized entry, and the unauthorized introduction of weapons or dangerous materials into or upon the following described facilities of the Fort Saint Vrain Independent Spent Fuel Storage Installation of the United States Department of Energy.

The FSV ISFSI is located on part of the original FSV Nuclear Generating Station site which is about three and one-half miles northwest of Platteville, Colorado. Platteville is located in Weld County and is about 35 miles north of Denver. The FSV ISFSI street address is 17122 19.5 Weld County Road, Platteville, Colorado. The ISFSI is located approximately 1500 feet northeast of the Public Service of Colorado fossil-fueled, power plant building. The facility occupies 10 acres more or less. The 229 Boundary of this facility is indicated by a combination of chain link fence and chain link gates which surround the facility.

FOR FURTHER INFORMATION CONTACT: Scott E. Ferrara, the Department of Energy—Idaho Operations Office (DOE-ID), 1955 Fremont Ave., Idaho Falls, ID 83415. Telephone (208) 526-5531.

Issued in Idaho Falls, Idaho, on June 1, 2017.

Scott E. Ferrara,
DOE-ID Facility Director.

Editorial Note: This document was received for publication by the Office of the Federal Register on December 21, 2017.

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DEPARTMENT OF ENERGY**Office of Science, Office of High Energy Physics; Request for Information: Impacts From and to Quantum Information Science in High Energy Physics**

AGENCY: Office of High Energy Physics, Office of Science, Department of Energy.

ACTION: Notice of request for information (RFI).

SUMMARY: The Office of High Energy Physics (HEP) in the Department of Energy (DOE) invites interested parties to provide input on topical areas in which progress in quantum information science can inform high energy physics, and on contributions that the high energy physics community can make to advancing quantum information science.

DATES: Written comments and information are requested on or before February 12, 2018.

ADDRESSES: Interested persons may submit comments by email only. Comments must be sent to *QISandHEP-RFI@science.doe.gov* with the subject line “Quantum Information Science and HEP RFI”. Any attachments must be in one of the following formats: ASCII; Word; RTF; or PDF.

FOR FURTHER INFORMATION CONTACT: Requests for additional information may be submitted to Dr. Lali Chatterjee, (301) 903-0435, *QISandHEP-RFI@science.doe.gov* or Dr. Altaf H. Carim, (301) 903-9564, *QISandHEP-RFI@science.doe.gov*.

SUPPLEMENTARY INFORMATION: Quantum information science (QIS) encompasses novel approaches to fundamental science and to applications such as sensing, communications, simulation, and computing that are enabled by understanding and manipulation of the uniquely quantum phenomena of superposition, entanglement, and squeezing. Within high energy physics, DOE’s emphasis is on employing new perspectives and capabilities offered or enabled by QIS to address the science drivers identified by the community in the May 2014 “Building for Discovery” report of the Particle Physics Project Prioritization Panel (P5).¹ Focus areas include quantum computing and foundational QIS, quantum sensor technology, and novel experiments exploiting quantum entanglement. QIS methods and concepts are proving increasingly important in advancing fundamental understanding in, *e.g.*, the search for dark matter, emergence of space-time, and the black hole information paradox. Likewise, these advances contribute to development of QIS including quantum error correction and thermalization. Because the field is interdisciplinary and progressing rapidly, effective research programs may require collaborative groups with

¹ https://science.energy.gov/~media/hep/hepap/pdf/May-2014/FINAL_P5_Report_Interactive_060214.pdf.

appropriate combinations of knowledge, capabilities, and experience in quantum information, particle physics, and/or other related fields. Several DOE HEP reports provide additional information pertaining to QIS impacts on and from HEP.^{2 3 4}

The U.S. Department of Energy’s Office of High Energy Physics in the Office of Science seeks input from stakeholders regarding potential research and development in QIS that addresses scientific and technological needs in high energy physics, and regarding capabilities in the high energy physics community that could contribute to the advancement of QIS. The information received in response to this RFI will inform and be considered by the Office of High Energy Physics in program planning and development. Please note that this RFI is not a Funding Opportunity Announcement, a Request for Proposal, or other form of solicitation or bid of DOE to fund potential research and development work in QIS.

Request for information: The objective of this request for information is to gather input about opportunities for research and development at the intersection of quantum information science and high energy physics, to inform Federal efforts in this area. The questions below are intended to assist in the formulation of comments, and should not be considered as a limitation on either the number or the issues that may be addressed in such comments.

The DOE Office of High Energy Physics is specifically interested in receiving input pertaining to any of the following questions:

(1) Fundamental Science

What are the key questions, opportunities, needs, and challenges for QIS to contribute to progress in the following topics? What kinds of experiments or calculations are needed to advance understanding? How can research in these areas contribute to the advancement of QIS?

- a. Quantum gravity and emergence of space-time
- b. Tensor networks, gauge symmetries, and field theories

² HEP-ASCR Study Group Report, Grand Challenges at the Interface of Quantum Information Science, Particle Physics, and Computing, 2015, https://science.energy.gov/~media/hep/pdf/files/BannerPDFs/QIS_Study_Group_Report.pdf.

³ HEP-BES roundtable report, “Common Problems in Condensed Matter and High Energy Physics”, 2015, https://science.energy.gov/~media/hep/pdf/Reports/HEP-BES_Roundtable_Report.pdf.

⁴ HEP-ASCR QIS roundtable report, “Quantum Sensors at the Intersections of Fundamental Science, QIS and Computing”, 2016, http://science.energy.gov/~media/hep/pdf/Reports/DOE_Quantum_Sensors_Report.pdf.

- c. Holographic correspondence and black hole physics
- d. Dark matter, dark energy, and physics beyond the Standard Model
- e. Analog simulation and emulation of quantum systems of interest to particle physics

(2) Devices, Tools, Approaches, and Techniques

What developments are needed, are on the horizon, or can be envisioned in the following areas? How will they contribute to high energy physics? How can high energy physics expertise, resources, or capabilities in these or other areas contribute to broader advances in quantum information science?

- a. Quantum sensors exploiting superposition, entanglement, and/or squeezing
- b. Supporting technologies (superconducting radio frequency cavities, cryogenics, fast feedback and control systems, etc.)
- c. Data analysis and background reduction
- d. Machine learning and optimization
- e. Algorithm development
- f. Error correction and measurement

(3) Organizational and Assessment Considerations

- a. What metrics could be applied to evaluate progress of the field and assess impacts of Federal investments?
- b. What are key obstacles, impediments, or bottlenecks to advancing research at the intersection of QIS and HEP?
- c. What mix of institutions (industrial, academic, lab) could best carry out the envisioned research and/or development, and who should drive the formulation of such efforts?
- d. What collaboration models would be most effective for pursuing joint R&D?
- e. What resources at DOE National Laboratories would be beneficial for and could accelerate or facilitate research in this topic?
- f. Are there other factors, not addressed by the questions above, which should be considered in planning DOE HEP activities in this subject area?

Comments containing references, studies, research, and other empirical data that are not widely published should include copies of the referenced materials. Note that comments will be made publicly available as submitted. Any information that may be confidential and exempt by law from public disclosure should be submitted as described below.

Confidential Business Information: Pursuant to 10 CFR 1004.11, any person submitting information he or she

believes to be confidential and exempt by law from public disclosure should submit via email: One copy of the document marked “confidential” including all the information believed to be confidential, and one copy of the document marked “non-confidential” with the information believed to be confidential deleted. DOE will make its own determination about the confidential status of the information and treat it according to its determination. Factors of interest to DOE when evaluating requests to treat submitted information as confidential include: (1) A description of the items; (2) whether and why such items are customarily treated as confidential within the industry; (3) whether the information is generally known by or available from other sources; (4) whether the information has previously been made available to others without obligation concerning confidentiality; (5) an explanation of the competitive injury to the submitting person which would result from public disclosure; (6) when such information might lose its confidential character due to the passage of time; and (7) why disclosure of the information would be contrary to the public interest.

Depending on the response to this RFI, subsequent workshops or other activities may be held to further explore and elaborate the opportunities.

Issued in Washington, DC, on December 18, 2017.

James Siegrist,

Associate Director of Science for High Energy Physics.

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DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Project No. 3102-025]

Jason and Carol Victoria Presley; Notice of Intent To File Subsequent License Application, Filing of Pre-Application Document, Request to use the Traditional Licensing Process, and Request To Waive Pre-Filing Requirements

a. *Type of Filings:* Notice of Intent to File Subsequent License Application and Request to Waive Pre-Filing and Notice of Intent Requirements and Notice of Filing of Preliminary Application Document and Request to Use the Traditional Licensing Process

b. *Project No.:* 3102-025.

c. *Dates Filed:* September 12 and October 31, 2017.

d. *Submitted By:* Jason and Carol Victoria Presley.

e. *Name of Project:* High Shoals Project.

f. *Location:* On the Apalachee River in Walton, Morgan, and Oconee Counties, Georgia. The project does not occupy federal lands.

g. *Filed Pursuant to:* Federal Power Act, 16 U.S.C. 791 (a)–825(r)

h. *Applicant Contact:* Mr. Jason Presley and Ms. Carol Victoria Presley, 110 Frazier Hill Road, Bishop, GA 30621, (706) 769-8293, email: jason@presley.us, victoria@presley.us.

i. *FERC Contact:* Michael Spencer at (202) 502-6093 or email at michael.spencer@ferc.gov.

j. On September 12, 2017, Jason and Carol Victoria Presley (licensee) filed a Notice of Intent to file a subsequent license application (Notice of Intent), and a request that the Commission waive certain deadlines, as required by the Commission’s regulations, for filing the Notice of Intent, Pre-Application Document (PAD).¹ The licensee requests waiver of the Commission’s regulations to allow for additional time to: (1) Consult with agencies and stakeholders to support a request to use the Traditional Licensing Process (TLP); (2) compile project documents for public inspection; and (3) submit a PAD and request to use the TLP.

k. On October 31, 2017, the licensee filed a PAD and a request to use the TLP.

l. The licensee requests waiver of the Commission’s regulatory deadlines and notice requirements for the Notice of Intent, PAD, and Request to Use the TLP because of recent resolution of transfer of the project following the death of the prior licensee and the subsequent transfer of license to current licensee.²

m. With this notice we are soliciting comments on the licensee’s PAD, request to use the TLP, and request to waive certain pre-filing requirements. All comments should be sent to the address in paragraph o below. Any individual or entity interested in submitting comments must do so within 60 days from the date that the Commission issues this notice.

n. The Notice of Intent, waiver request, PAD, request to use the TLP, and associated filings are available for review at the Commission in the Public Reference Room or may be viewed on the Commission’s website (<http://www.ferc.gov>)

¹ The licensee requests that sections 5.2, 5.3, 5.5, 5.6, 16.6, and 16.7 of the Commission’s regulations be waived. 18 CFR 5.2, 5.3, 5.5, 5.6, 16.6, 16.7 (2017).

² *Gaynor L. Bracewell and John and Carol Victoria Presley*, 159 FERC ¶ 62,314 (2017) (Order Approving Transfer of License).