[6450-01-P]

DEPARTMENT OF ENERGY

National Power Transformer Reserve

AGENCY: Office of Electricity Delivery and Energy Reliability, Department of Energy.

ACTION: Request for information (RFI).

SUMMARY: The Department of Energy (DOE), Office of Electricity Delivery and Energy Reliability (OE), is seeking comments and information from interested parties to inform its policy development related to the possible establishment of a national reserve of power transformers that support the bulk power grid. The focus of the RFI is on the design and implementation of a National Power Transformer Reserve Program.

DATES: Comments must be received on or before [**INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: Comments can be submitted by any of the following methods and must be identified as "Transformer Reserve." By the Federal eRulemaking Portal: www.regulations.gov. Follow the instructions for submitting comments. By email: LPT.RFI.2015@hq.doe.gov, and include "Transformer Reserve" in the subject line of the message. By mail: Alice Lippert, Office of Electricity Delivery and Energy Reliability, U.S. Department of Energy, Forrestal Building, Room 1E-078, 1000 Independence Avenue, S.W., Washington, DC 20585. Note: Delivery of the U.S. Postal Service mail to DOE may be delayed by several weeks due to

security screening. DOE, therefore, encourages those wishing to comment to submit comments electronically by e-mail.

FOR FURTHER INFORMATION CONTACT: Requests for additional information should be directed to Alice Lippert, Office of Electricity Delivery and Energy Reliability, U. S. Department of Energy, 1000 Independence Avenue, S.W., Washington, DC 20585 at Alice.Lippert@hq.doe.gov, 202-586-9600.

SUPPLEMENTARY INFORMATION:

I. Background.

The U.S. electricity sector operates a complex and highly reliable electric power system, upon which the Nation's economy and security depend. The North American Bulk Power System (BPS) is extensive, consisting of various infrastructure components, including transformers, switches, transmission towers and lines, control centers, and computer controls. Of the BPS' physical infrastructure, large power transformers (LPTs) are critical components, because the reliable operation of the BPS depends heavily on the safe and efficient operation of a network of interconnected LPTs.

LPTs have long been a concern for the U.S. electricity sector because the failure of a single unit can interrupt electricity service to a large number of customers and lead to collateral damage, and it could be difficult to quickly replace it. LPTs are large, custom-designed pieces of equipment that entail a significant capital expenditure and a long lead-time to manufacture and ship. LPTs are not usually interchangeable. System owners often own and maintain spare LPTs at a number sufficient to mitigate risks from premature failure. The limited availability of spare

LPTs, and the long lead times to procure replacements, could pose a potential threat to the availability and reliability of the Nation's bulk power system in the event of an emergency where a relatively large number of existing LPTs are damaged or destroyed.

Large-scale disruptions to the U.S. BPS are rare; however, it faces a wide variety of evolving threats, including but not limited to: cyber and physical security intrusions, weather-related incidents; geomagnetic disturbances (GMD); and electromagnetic pulse (EMP) effects. The electricity sector serves one of the four lifeline functions as identified by the Department of Homeland Security, which means that its reliable operation is so critical that a disruption or loss of electricity will directly affect the security and resilience of other critical infrastructure and the Nation.

The recently released "Quadrennial Energy Review, Energy Transmission, Storage and Distribution Infrastructure Report, April 2015," recommends that "DOE should coordinate with the Department of Homeland Security and other Federal agencies, States, and industry—an initiative to mitigate the risks associated with the loss of transformers (p. 2-42)." This request for comment is an initial step in executing that recommendation. Part of the national strategy to reduce risk from large power transformers, which has been under development by the DOE, includes assessing the need for a reserve of LPTs.

II. Request for Information.

For the reasons stated above, DOE is exploring possible National strategies to mitigate risk to the reliability of the bulk power system arising from the loss of LPTs. This RFI provides the public, and industry stakeholders, the opportunity to provide their view on the development and structure of a National program to establish and maintain large power transformer reserves in the United States. The intent of this RFI is to solicit information pertinent to the need and

viability—regulatory, economic, and technical—of such a program. The information obtained is meant to be used by DOE for program design and strategy development purposes. In your comments, please reference the question(s) to which you are responding. Please also provide supporting information if noted, including studies, reports, data, and examples relevant to mitigating the risks associated with the loss of LPTs.

1. Program Need

Is there a need for a National Power Transformer Reserve? How would such a reserve affect the reliability and resiliency of the North American bulk power system? Are there alternatives to a power transformer reserve program that can help ensure the reliability, resiliency, and recovery of the bulk power system? Is there a need for a nationally-maintained inventory of large power transformers?

2. Power Transformer Criteria

What types and sizes of power transformers should be considered for inclusion in a transformer reserve program versus operational spare capacity? What are the design considerations for replacement transformers to support the bulk power system?

3. Ownership and Economics

What would be an appropriate structure for procuring and inventorying power transformers? How, and by whom, should a program of this type be administered? How would a transformer reserve be funded?

4. Technical Considerations

Is it technically feasible to develop a reserve of large power transformers when most are custom engineered? Is additional research and development (R&D) necessary to develop suitable

replacement transformers that can be rapidly deployed from inventory in the event of an emergency?

5. Procurement and Management

How should procurement, maintenance and management of the reserve power transformers be conducted? For example, should manufacturers be pre-qualified, and if so, according to what criteria?

6. Supply Chain

What are the critical supply chain components for the manufacture and delivery of large power transformers (e.g., electrical steel, copper, silicone, high voltage bushings, etc.)? Are there shortages or other considerations that could necessitate using the Defense Production Act Priority Ratings to ensure sufficient parts are available in a time of need? Are there related skilled workforce issues?

7. Manufacturing

Is there adequate manufacturing capacity to support a transformer reserve program? What is the lead time for engineering, manufacture, and delivery of large power transformers? Are there approaches that could help to speed manufacture and delivery of large power transformers?

8. Transport and Deployment

What specialized transport infrastructure would be necessary to ship large power transformers from manufacturing site to storage locations, and from storage locations to field site in the event of an emergency? What should be the number and location of transformer storage sites? What are feasible delivery times for LPTs that reside in a reserve to an affected site?

9. Field Engineering and Installation

Are there adequate domestic engineering and installation resources available throughout the United States to install multiple bulk power transformers simultaneously? What additional resources would be necessary?

10. Criteria for Deploying Transformers

What criteria should be used for activating and deploying transformers from the reserve? How would deployment be funded?

11. Additional Comments

Are there additional concerns regarding a National Power Transformer Reserve Program that need to be considered?

Issued at Washington, DC on July 2, 2015.

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Office of Electricity Delivery and Energy Reliability.

[FR Doc. 2015-16784 Filed: 7/8/2015 08:45 am; Publication Date: 7/9/2015]