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PUBLIC INTEREST COMMENT

Assistance to Foreign Atomic Energy Activities

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Department of Energy

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INTRODUCTION

The Regulatory Studies Program of the Mercatus Center at George Mason University is dedicated to advancing knowledge about the effects of regulation on society. As part of its mission, the program conducts careful and independent analyses that employ contemporary economic scholarship to assess rulemaking proposals and their effects on the economic opportunities and the social well-being available to all members of American society.

This comment addresses, from an economic point of view, the efficiency and efficacy of the proposed rule covering limitations on the international sale of civilian nuclear power equipment. Specifically, it examines how the proposed rule may be improved by more closely examining the societal goals the rule intends to achieve and whether this proposed regulation will successfully achieve those goals. In many instances, regulations can be substantially improved by choosing more effective regulatory options or more carefully assessing the actual societal problem.

SUMMARY OF THE PROPOSED RULEMAKING

The Department of Energy (DOE) controls transfers of unclassified nuclear technology and assistance, governed by the Atomic Energy Act (AEA) of 1954 through the regulations designated as Part 810, with the aim of preventing international proliferation of nuclear capacity.[1] The current supplemental notice of proposed rulemaking (SNOPR) updates an older notice of proposed rulemaking (NOPR) following a two-year period of public commentary. The DOE will implement this SNOPR in conjunction with the Defense Department to identify activities that can be generally authorized (GA, requiring no further authorization) and those that require specific authorization (SA, approved or denied). The most important part of the SNOPR is a proposed revision that expands the list of SA trading destinations. The revision of approved destinations

1. Part 810 regulations (10 CFR Part 810) implement section 57 b.(2) of the Atomic Energy Act of 1954, as amended by section 302 of the Nuclear Nonproliferation Act of 1978.

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will make it much more difficult for American firms to export equipment and expertise. The DOE should recognize a tradeoff between export gains and security losses and vice versa while formulating the GA and SA lists, but this approach has not been followed.

PROPOSED RULEMAKING

The primary component of the SNOPR is a revision of trading destinations that moves 80 countries into the SA category while newly awarding GA status to merely three trading partners. The DOE describes its approach as based on effectively reducing threats, supporting nuclear trade, and providing transparent, cost-effective regulation, but it does not seem the DOE has fully considered the costs of the proposed regulation. These costs will be incurred by firms as they deal with the extra paperwork and procedures resulting from the change, even in cases where they are eventually allowed to trade.

Lesser changes proposed in the SNOPR include removing distinctions between US persons and others in reviewing allowable trading, focusing instead on the degree of foreign control exercised in a proposed transfer. Sensibly, the case-by-case approach here recognizes the export-security tradeoff in eschewing a rigid categorization, in contrast to approach over the GA-SA list. Exemptions are also detailed in the SNOPR for such things as published basic scientific research and transfer of fission material because these cannot add anything to the militarization of nuclear equipment and assistance. Transfer of material to lawful permanent residents of the United States is also derestricted by the SNOPR, as this appears to have caused unnecessary difficulties in trade activities. The SNOPR allows technology transfers to citizens or nationals of specific authorized destinations when these people are lawfully employed in the US nuclear industry, subject to vetting and a confidentiality agreement preventing unauthorized disclosure of the technology. Special nuclear material that could be easily adapted to military use continues to be firmly controlled and requires a specific authorization for all foreign destinations.

Compared with the earlier NOPR, the DOE responded to three areas of concern over the regulatory process, foreign destinations, and specific activities. The DOE recognizes the main area of concern to be its reconstruction of the list of destinations, and it argues that the main purpose in carrying out a revision is to cope with an outdated list of GA and SA destinations. Several countries have ceased to exist since the previous list was constructed and new, acceptable destinations have resulted from geopolitical realignment.[2] There will be 47 generally authorized destinations, with each country having a 123 Agreement with the United States and an acceptable International Atomic Energy Association (IAEA) safeguards regime, including countries such as Canada, Japan, and the EURATOM signatories. Mexico will be included in the list for certain activities for the first time by the SNOPR. Previously there was a great deal of criticism over Mexico's former exclusion, particularly given the existence of the US-designed and supplied Laguna Verde station.[3] China, India, and Russia continue to be excluded.

The DOE received comments on its earlier NOPR claiming that the then proposed regulation had a net that would also catch some activities that were unlikely to produce militarily adaptable nuclear material. The DOE therefore appended to the SNOPR a list of reactor equipment subject to export control, specifying what activities would be targeted. The DOE came under criticism for its earlier proposal to abandon a fast-track system for approving transfers of nuclear equipment and expertise in cases of urgent safety-related international demand. The DOE has now backtracked and aims to retain the fast-track system for these cases, which are essentially aid related.

2. For example, in 2009 the United Arab Emirates entered into a 123 Agreement with the United States. Section 123 of the Atomic Energy Act of 1954 establishes an agreement for cooperation as a prerequisite for nuclear trade between the United States and any other nation.
3. Responses to the earlier NOPR reported at 78 Fed. Reg. 46839.

THE COSTS AND BENEFITS OF THE PROPOSAL

As required by Executive Order 12866, the DOE assessed the regulatory proposal as an economically significant regulatory action, in this case because it is likely to have an annual effect on the economy of $100 million or more through the economic effects of the SNOPR on the reclassification of export destination status. Those effects will impact the viability of US technology. The DOE accordingly prepared an analysis of the potential benefits and costs associated with the SNOPR reclassification. The analysis was carried out by comparing US gains in trade from three countries (United Arab Emirates, Ukraine, and Kazakhstan) moving from SA status to GA status with losses associated with the move of 80 previously GA countries to SA status. The DOE considers that a total of $3 billion trade is involved in the changing of status.[4]

The DOE carried out a very crude calculation of trade impacts from the reclassification of countries by assigning transactions in its proprietary trade database to three measures of nuclear power development for particular countries over a three-and-a-half-year period. These categories are existing nuclear power generating capacity, nuclear generating capacity under construction by year, and nuclear generating capacity planned for construction. The DOE then applied these "base rates" to estimates, provided by several consulting firms, of future growth of the programs in particular countries, but the DOE gives few details of how consultants arrived at the estimates. The DOE admits there is no statistical basis for the estimation of effects, making it impossible to be confident in the resulting assessment of costs and benefits attached to the SNOPR reclassifications. The resulting balance between positively affected and negatively affected destinations is nonetheless declared to exceed $32 million per year.[5] It needs to be emphasized that this calculation is not a cost-benefit comparison. Rather, it is merely a calculation comparing two sets of trade flows, on rather questionable assumptions, carried out to promote the idea that the changes are beneficial, or at least do not create net harm. In fact, a true cost-benefit analysis would need to compare security benefits with a much wider range of costs and should use the results as a guide to forming the GA-SA list.

THE UNDERLYING ANALYSIS

Many of the underlying data result from technological modeling that is divorced from economic analysis. By the DOE's own admission the assessment of the impact of reclassification is incomplete: "The analysis … is a relative one that compares only the potential trade volumes for two sets of reclassification categories as defined in the SNOPR. The question of the absolute magnitude of impact requires an assumption regarding the degree of reduction that might result from reclassification."[6] (emphasis added) The DOE has formed the list based solely on judgments over security issues. The benefits and costs of the proposals should have been calculated more precisely, or the proposals should have been presented as more judgmentally based, as they in fact are. A greater range of alternatives could have been considered. In particular, a system of case-by-case analysis of proposed trades to destinations could have been adopted.

POOR QUANTIFICATION

Many calculations in the analysis supporting the SNOPR are so poorly carried out that they are misleading. Reliance on a series of outside estimates for growth of nuclear sectors in particular countries obscures issues rather than resolves them. This is one example of the troubling methodology:

4. Department of Energy, Analysis of Economic Impact Supplemental Notice of Proposed Rulemaking, 10 CFR 810, January 13, 2013 (RIA).
5. Reported at 78 Fed. Reg. 46842. Further cost-benefit claims are made in the RIA by applying 3 percent and 7 percent discounts to the net trade flows.
6. Department of Energy, RIA, 4.

> As an alternative to a regression approach, we developed a simpler, "base rate" approach to approximating trade flows.[7]

This is comparable to admitting that data will not support conventional statistical modeling and then ignoring the need for reliable estimation altogether. In general, research investigations proceed by adopting appropriate methods of analysis, not by choosing the mathematically simplest method. The DOE's approach with base rates gives numbers but not necessarily the right ones.

CONCLUSION

This is an important area with security concerns. The regulations were last updated in the 1980s and the DOE is right to review them now, but the destinations list in the rulemaking needs to have a firmer basis in economic analysis and be less reliant on a whole series of assumptions because the economic impact of restricting nuclear industry sales is substantial. As this is at a proposal stage, we can hope that public discussion will encourage the DOE to consider further alternatives and carry out a more detailed analysis.

7. Department of Energy, RIA, 7.