

810 shades of gray

You may have heard of 10 CFR Part 810, but it's not everything.

By Art Wharton

Nuclear exports have become somewhat of a hot topic over the past decade, as the industry has come to terms with the importance of the export market to its growth targets. Today, as the U.S. nuclear energy market declines, exports are necessary for a nuclear industry supplier company to remain viable and in business.

Back in the 1990s, an entire contract could be two to three pages. In 2018, the export regulation terms alone within a contract are two to three pages. Export regulations aren't the only parts of contracts that have gotten longer. Suffice it to say that deals can no longer be made with a handshake, and small businesses are at a distinct disadvantage in this environment. There is a tangled web of export controls from the Nuclear Regulatory Commission, the Department of Commerce (DOC), the Department of State (DOS), and the Department of Energy.

So often if you ask, "Is this business activity export controlled?" the answer that comes back is, "It depends." (Hint: The answer is "Yes." Technically, even pens and paper are under some sort of export control, even though they may not require a license.)

The form of export control imposed on a product or service depends on three things: scope, end use, and end user.

For a profession so accustomed to acronyms, a foray into the export control arena will expand the typical nuclear professional's vocabulary as he or she learns about International Traffic in Arms Regulations (ITAR), Export Administration Regulations (EAR), U.S. Munitions Lists (USML), the Nuclear Suppliers Group (NSG), the Commerce Control List (CCL), and determining the Export Control Classification Number (ECCN) of a product, technology, or service. While it doesn't cover everything, one regulation of great importance in the nuclear energy industry is 10 CFR Part 810, *Assistance to Foreign Atomic Energy Activities*.

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What is 10 CFR 810?

For the uninitiated, 10 CFR 810 is a relatively short regulation from the 1950s that identifies the scope of technology that is related to the production of special nuclear material over which the DOE currently has jurisdiction for export control. Due to some unfortunate interpretations inconsistent with what we're used to from the NRC, even utilization facilities¹ are considered a means of special nuclear material "production" by the DOE's National Nuclear Security Administration and considered in-scope for the DOE rather than the DOC. In the 1950s, prior to the formation of the DOE and the NRC, the execution of these controls was more compact and efficient, but now various agencies focus on different areas, which has led to less consistency in the use of terminology.

Section 57(b) of the Atomic Energy Act (AEA) of 1954—with certain portions written into the AEA by passage of the Nonproliferation Act of 1978—states:

It shall be unlawful for any person to directly or indirectly engage or participate in the development or production of any special nuclear material outside of the United States except (1) as specifically authorized under an agreement for cooperation made pursuant to section 123, including a specific authorization in a subsequent arrangement under section 131 of this Act, or (2) upon authorization by the Secretary of Energy after a determination that such activity will not be inimical to the interest of the United States: *Provided*, That any such determination by the Secretary of Energy shall be made only with the concurrence of the Department of State and after consultation with the Nuclear Regulatory Commission, the Department of Commerce, and the Depart-

¹As defined by 10 CFR 110.2 of the Nuclear Regulatory Commission regulations, *utilization facility* means (1) any nuclear reactor, other than one that is a production facility and (2) any of the following major components of a nuclear reactor: (i) reactor pressure vessel (designed to contain the core of a nuclear reactor); (ii) reactor primary coolant pump or circulator; (iii) "on-line" reactor fuel charging and discharging machine; and (iv) complete reactor control rod system. (3) A utilization facility does not include the steam turbine generator portion of a nuclear power plant.

ment of Defense. The Secretary of Energy shall, within ninety days after the enactment of the Nuclear Non-Proliferation Act of 1978, establish orderly and expeditious procedures, including provision for necessary administrative actions and inter-agency memoranda of understanding, which are mutually agreeable to the Secretaries of State, Defense, Commerce, and the Nuclear Regulatory Commission for the consideration of requests for authorization under this subsection.

Under this provision of the AEA, 10 CFR 810 as we know it today was born. Before the age of instantaneous global communication, the administration of a regulation that was intended to restrict the spread of knowledge/technology was relatively straightforward for both the regulator and the regulated. It was not, in the beginning, a high-volume regulation. Today, nuclear engineers joke that if they so much as utter the word "neutron" to someone from certain countries, they may inadvertently find themselves in jail.

Corporate lawyers are ensuring that employees are acutely aware of the existence of 10 CFR 810 in the event that anyone who is not defined as a "U.S. person" under 810.3 is in the vicinity. Deemed exports² can occur during a conversation in a living room in Iowa just as easily as in a conference room in Mumbai.

The question that develops shades of gray requiring a lot of interpretation by nuclear professionals, lawyers, and regulators is what exactly constitutes "direct or indirect assistance" as written and as intended by regulation. While saying the word "neutron" (or revealing any other publicly available information) in the vicinity of a foreign national is not assistance, the performance of a core design and provision of that design data most certainly are. Between these two black-and-white examples are a variety of less straightforward examples that elicit the need for interpretation and determination, where industry participants must tread carefully.

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²The release of regulated information or technology to a foreign national living in the United States is "deemed" to be an export to the home country or countries of the foreign national.

810 has a lot going on

In October 2014, the Government Accountability Office published a report (GAO-15-124³) indicating that the performance of the U.S. government in the administration of 10 CFR 810 was, in a word, *slow* (see accompanying table). The GAO also declared the scope of 10 CFR 810 to be unclear. The DOE vowed to improve, and, in fact, was in the midst of drafting a rule change based on lessons borne from administering a 1970s regulation in the 21st century. The DOE also initiated a Process Improvement Project and instituted the e810 system for web-based submissions to the NNSA.

In February 2015, the first update or rule change to 10 CFR 810 since 1978, administered by the NNSA, was released to the public, enacting a few clarifications to the regulation.

In April 2016, the first individual ever to be indicted by the Department of Justice for violations of 10 CFR 810 was charged under the AEA. In August 2017, Szuhsung “Allen” Ho, a Taiwan-born naturalized U.S. citizen, was sentenced to 24 months in prison for passing restricted U.S. nuclear technological information to China (NN, Oct. 2017, p. 30). Chinese utility China General Nuclear Power Company was also indicted, but sources say that the company’s management has yet to officially acknowledge the indictment.

This last situation sent ripples throughout the industry. Necessary 10 CFR 810 authorizations, renewals, and revisions for entities in China have experienced delays in excess of the average time that the GAO declared as “slow” in 2014. Many small companies have been waiting and have lost business, while large companies with established licenses have exported the same competing scope to the same end users.

This year, NNSA staff have been performing more outreach to remind companies and individuals of continuing obligations under the law after leaving a corporation, whether upon retirement or for other employment. The main lesson: If you’re an individual asked to consult on nuclear technology, particularly in any country not found in Appendix A of 10 CFR 810, make sure you are operating under a valid authorization that is being appropriately reported to the NNSA.

When faced with the concept of applying for 810 licenses today, many executives give up on initiating sales negotiations due to the variety of real and perceived difficulties involved. The reputation of the regulation precedes it. Aside from the clear and present drama occurring in foreign relations between the United States and China and Russia, other specific authorizations are flowing through the pro-

cess normally, according to NNSA sources.

Another abnormal situation occurred when the U.S. nuclear industry was up against a stiff deadline for a new plant proposal in Saudi Arabia. The 10 CFR 810 process took a record short amount of time—just 90 days in late 2017—for a specific authorization, so it’s clear that a quick turnaround is not impossible. The human resources required on both the industry and government sides of the equation were high, however, which means that this level of alignment among the various bureaucracies involved—in the United States and externally—may not be achievable for small businesses.

The main paradox that exporters encounter in the implementation of 10 CFR 810 is that three of the most difficult countries in which to gain export approvals are established as nuclear weapons states: China, Russia, and India. To slow the spread of civil nuclear utilization reactors in these nations serves no technically defensible purpose in nuclear weapons nonproliferation space.

Inimicality

The word “inimical”⁴ might have caught your eye when you read the text from Section 57(b) of the AEA. Even those with very good language lessons in their childhood may not have encountered this word until reading the AEA.

As the 810 review process goes on, after foreign assurances come back to the DOS, the interagency (DOS, DOC, DOE, DOD, NRC) goes through an inimicality review wherein it determines, as the law says, whether the transfer of the applied scope to the end user for the applied end use is “inimical to the interest of the United States.” This section of the AEA was written in the Nuclear Nonproliferation Act (NNPA) of 1978, and while many would assume that this inimicality review would be limited to the scope of nonproliferation interests, they would be wrong as it is currently being applied. Inimicality is used several times in the AEA/NNPA context. In some cases, the law says that the decision must not be inimical to the common defense and security of the United States. Regarding Part 810, however, it says “will not be inimical to the interest of the United States,” thereby better

	Initial review stage	Interagency review stage	Final review stage
Target review time	30 days	30 days	None
Median review time	71 days	105 days	125 days
Longest review time	1,035 days	810 days	921 days
Shortest review time	0 days ^a	12 days	14 days
Reviews exceeding 30 days	80 of 89	85 of 89	86 of 89

Source: GAO analysis of Department of Energy information | GAO-15-124

^a The 0-day initial review was for an amended application whose initial review was completed the same date the amended application was submitted.

encompassing the broader scope of 810.

Today, the interagency is considering whether a product or technology can be deliberately misused by the end user in a non-weapons manner, even if there is no indication that the end user would do so. Also being considered are corporate espionage concerns, naval development concerns, financial concerns from the Department of the Treasury, and any other moderate discomfort the government has with applications. Inimicality is now a broad review that has the potential, as dozens of bureaucrats see the application pass their desks, to bring about vague “national security” reasons for an obscure technology to be blocked or slowed down.

What’s not in the headlines

The chorus of complaints from businesses with active and inexplicably delayed 810 applications in China were finally heard. As they try to compete with larger firms with established 810 approvals and active business in China, their business was put on hold while the interagency disagreed on 810 approvals in China. Rather than providing “no” answers and inviting swift lawsuits for unequal treatment under 10 CFR 810, the process just came to a standstill.

The White House National Security Council formed a committee in December 2017, with its first meeting scheduled for the last week of January 2018. The charter of the committee was to make a federal determination on nuclear trade policy with China, given the latest concerns discovered through various channels, including the Allen Ho case. Typically, the same interagency committee process undergoes an escalation from assistant secretaries to deputy secretaries to the cabinet level, and if those three levels of the committee cannot come to a unanimous conclusion, they take the decision to the president. This process had been described to me to be reliably three months long. As this article is being written, the committee has yet to report its conclusions. The secretary of state was fired via Twitter during this time frame. A new national security advisor was also named, and nuclear policy positions in the National Security Council were also in flux. The executive branch has

³<www.gao.gov/products/GAO-15-124>

⁴‘inimək(ə)l/ - adjective (1) tending to obstruct or harm. “actions inimical to our interests” (2) unfriendly; hostile. “an inimical alien power”

not exactly been consistent or reliable in these particular matters recently.

There have, at least, been indications that the conversation is progressing, even if those of us in industry may not like its implications.

On July 11, Chris Ford, assistant secretary of the Bureau of International Security and Nonproliferation in the Department of State, discussed the U.S. government's concerns at a gathering in Los Alamos, N.M., that was hosted by the Center for Strategic and International Studies⁵:

China's "military-civil fusion" policy is personally overseen by Xi Jinping, and it is enshrined in national law and strategy at a level which cannot be overridden by such mundane things as end-user commitments on export licenses, promises made to foreign officials about how technologies are to be controlled, or contractual commitments made to foreign governments or companies. If any given technology is in any way accessible to China, in other words, and officials there believe it can be of any use to the country's military and national security complex as Beijing prepares itself to challenge the United States for global leadership, one can be quite sure that the technology will be made available for those purposes—pretty much no matter what.

This may require us to reexamine how we approach our national security export controls, at least vis-à-vis China. Not all technologies have special significance in this way, of course, nor are all sensitive technologies uniquely held by U.S. suppliers. But as they relate to Chinese engagements, our traditional approaches may place much more faith in the integrity of end-use promises and internal institutional firewalls than we now know such protections really deserve.

Just as anything a U.S. company could sign in a contract could be superseded by U.S. federal law, the U.S. government is grappling with the Chinese government policy that is in direct conflict with contract terms and the terms of the Section 123 Agreement between the United States and China. Ford suggested that this recalibration of China nuclear export policy is ongoing.

Reform is brewing

This year, U.S. Rep. Bill Johnson (R., Ohio), sponsored legislation—H.R. 6351, Advancing U.S. Civil Nuclear Competitiveness and Jobs Act—aimed at enacting reforms to 10 CFR 810 to help expedite

certain activities. It enabled certain approvals to be delegated by the secretary of energy to appropriate levels in the NNSA organization, rather than requiring them to be signed by someone at the cabinet level. These may include uncomplicated renewals, or additions of end users to existing authorizations. Further, the legislation enables an "expedited procedure" for 810 approvals for technologies that present low risk for proliferation, such as light-water reactor technology, except in the case where they are being exported to nuclear weapons states that are not U.S. allies. It is paradoxical, if not outright illogical, that such an exception would exist in the law regarding nations already known to possess nuclear weapons technology.

Let's say that again. An expedited procedure cannot exist as written in H.R. 6351 for the export of low proliferation-risk technologies in nuclear weapons states (where proliferation is already a foregone conclusion), except for France and the United Kingdom, where the expedited procedures would be irrelevant anyway due to general authorization provisions. The fact that this provision exists in H.R. 6351 is relatively benign, since the 2016 National Defense Authorization Act already instituted additional levels of review for 810 exports to these countries. It is, at best, just a redundancy.

The 2019 National Defense Authorization Act, passed into law in August 2018, allowed for the secretary of energy to delegate 810 approvals "on a case-by-case basis" consistent with national security interests of the United States and required the DOE to institute civil penalties for violations under 10 CFR 810.

The American Nuclear Society submitted a letter to the DOE General Counsel in July 2017 supporting reform of 810 to meaningfully focus it on real proliferation risks. In the letter, Bob Coward, who was the ANS president at the time, stated: "Generally authorizing LWR technology would allow the federal government to focus its oversight of nuclear technology exports on those areas that truly pose a threat of proliferation while strengthening U.S. ability to influence global nuclear safety and nonproliferation norms through successful commercial engagement."

It is encouraging to see that H.R. 6351 incorporates this suggestion, which somehow must have found its way to Representative Johnson's office, but the restrictions on China, Russia, and India greatly reduce its impact. Despite H.R. 6351's falling short of providing reform that would actually change the game for U.S. global competitiveness in civil nuclear trade, it is a step in the right direction. The industry is becoming more engaged in this area, so expect to see more change advocated in the coming years. **NN**

⁵<www.state.gov/t/isn/rls/rm/2018/284106.htm>