

U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

Subject: Allowing Previously Shuttered Nuclear Plants to Restart Unmodified

Dear Ms. Bladey,

Following is my reply to Mr. Mark A. Satorius' letter dated 27-Mar-2015. The aim of this letter is to provide the additional information that Mr. Satorius had requested in order for this petition to be docketed. Please let me know if you have any additional questions.

(1) I am requesting that the following section of Title 10 of the Code of Federal Regulations be modified to read as follows:

Section 52.110(b)

Upon docketing of the certifications for permanent cessation of operations and permanent removal of fuel from the reactor vessel, or when a final legally effective order to permanently cease operations has come into effect, the 10 CFR part 52 license no longer authorizes operation of the reactor or emplacement or retention of fuel into the reactor vessel, **except as follows:**

(b)(1) If the facility had been shut down and de-fueled prior to January 1, 2008, was operational prior to shut – down, and significant decommissioning activities\* have not commenced since shut - down, the licensee shall have the option to either:

(a) Reassemble the plant into an operational condition, have the NRC conduct a general inspection of the plant, re-load nuclear fuel into the reactor, and resume normal operation of the facility per 10 CFR 52, or

(b) Request that the facility be placed in a “cold stand-by mode” for up to ten (10) years. From this mode, the facility may be reassembled, re-fueled, and re-started by the licensee at any time, and normal operation per 10 CFR 52 may resume, as specified in section (a) above. Extensions to the “cold stand-by mode” beyond (10) years would have to be requested in writing from the NRC by the licensee.

**\*Note:** “Significant Decommissioning Activities” are defined as those activities which are, for all intents and purposes irreversible, and which render the plant inoperable once performed. Examples of such activities would include disturbance of the reactor vessel or its primary cooling system, demolition of the containment structure, or demolition of any primary plant structure. In general, any mechanical disassembly and / or removal of plant sub-systems, would not constitute significant decommissioning, if the plant may be returned to an operational status by the reassembly and re-installation of those systems.

(2) The petitioner's grounds for requesting the above action are as follows: Climate change is a serious issue facing our nation. Its consequences have the potential to cause significant water shortages, limit the production of food, and contribute to more severe weather phenomena, such as hurricanes and floods. Together, these events have the potential to inflict billions of dollars in economic losses, as well as widespread human suffering.

We must strive to mitigate these events by reducing the amount of greenhouse gasses that we emit into the atmosphere. One of the most effective means of accomplishing this is by using nuclear power for electricity generation. However, in order to be effective, this solution must also be affordable and timely. The construction of new nuclear capacity is generally very expensive and lengthy, but the solution that the petitioner proposes is both cost – effective, and expedient.

This solution is to give the licensees of recently shuttered nuclear power plants the option to simply re-start these plants, without having to perform any modifications to them, as specified in the amendment to Section 52.110 (b), above. The petitioner’s proposal has the potential to restore over 3,000 megawatts of carbon – free electrical generating capacity to the grid, at a fraction of the cost, and in a fraction of the time, that it would take to replace this capacity with renewables, or new nuclear builds.

The petitioner believes that the risk of his proposal to the public is generally negligible. This is because all of the nuclear plants that had shut down in the previous (8) years had excellent safety records (as have essentially all U.S. nuclear plants). No plant employee, or member of the public, as ever been harmed by the release of radiation in the U.S. in at least the past 30 years.

Therefore, allowing these recently – shuttered plants to restart, unmodified, would be akin to granting operating license extensions to existing plants. The risk level would be about the same, if not lower. The plants in question had been operating reliably for several decades, and one may say that they have proven their safety records through field experience. The most important thing would be to conduct a thorough safety inspection of each plant prior to re-start, to make sure that the plant has not been damaged by any decommissioning activities that may have already begun. If the plant is undamaged, there is no reason why it should not be permitted to re-start.

- (3) Following are a few basic calculations to support the petitioner’s position. The petitioner will compare the cost and time frame of his proposal to the cost and time frame of replacing a similar electrical generating capacity with renewables, or new nuclear builds. The analysis shows that permitting recently – shuttered nuclear plants to re-start is several orders of magnitude more cost effective than building new capacity, and can also be accomplished in a fraction of the time.

Assume that the total generating capacity of the San Onofre, Kewaunee, and Vermont Yankee nuclear plants was 3300 megawatts, and that their average capacity factor was 90 percent. When compared to the 392 megawatt Ivanpah solar plant, with its 12% capacity factor, it would take (63) Ivanpah plants to replace this capacity, at a cost of \$139 billion.

$3300 \text{ mW}(0.90) = 2970 \text{ mW (nuclear plants)}$

$392 \text{ mW (0.12)} = 47 \text{ mW (Ivanpah)}$

$2970 / 47 = 63 \text{ Ivanpahs required. Cost of Ivanpah plant was \$2.2 billion.}$

Replacing this capacity with new nuclear builds:

Assume \$8 billion for a new 1 gW plant

$3.3 \text{ gW} * (\$8 \text{ bil} / \text{gW}) = \$26.4 \text{ billion} \leftarrow$

Time Frame:

It is reasonable to assume that it would take at least (10) years to build (3) new nuclear plants to replace the lost capacity. Building (63) new Ivanpah solar plants would take at least that long, if not longer.

Comparison:

Now, let us assume that permitting Kewaunee, San Onofre and Vermont Yankee plants to re-start would only require safety inspections. If each plant received a 10,000 man-hour safety inspection, at a cost of \$250 per hour, that would only amount to \$2.5 million per plant, or \$7.5 million for the (3) plants assuming that nothing else was needed for re-start. When compared to a new nuclear build, cost of a re-start is:

$$(\$7.5 \text{ million} / \$26.4\text{k million}) * 100 = 0.028 \% \leftarrow$$

When compared to Ivanpah,

$$(\$7.5 \text{ million} / \$139\text{k million}) * 100 = 0.005 \% \leftarrow$$

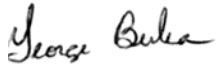
Time Frame:

The inspections required for a re-start could probably be accomplished in under (6) months, versus the (10) years required for a new build.

$$(0.5 \text{ year} / 10 \text{ years}) * 100 = 5 \% \leftarrow$$

In summary, the petitioner believes that allowing recently shuttered nuclear power plants to re-start, unmodified, offers a safe, affordable, realistic, timely, and effective solution to the problem of climate change, by restoring a significant amount of carbon – free electrical generating capacity to the electric grid.

Regards,



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George Berka