

57 Concord St.
Waterbury, CT 06710
December 26th, 2018

U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Good Morning,

The purpose of this communication is to submit a petition for rule making. The Petitioner, Mr. George Berka, hereby requests that,

(1), 10 C.F.R. Part 52.110(b) be amended to read as follows:

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 C.F.R. Part 52 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 in an operational condition at the time of retirement, had last operated no more than twenty-one (21) calendar years prior to the retirement date, and remains intact, the licensee shall have the option to return the facility to a fully operational status, after having successfully passed a general safety inspection. The safety standards that had been in place at the time the facility had last operated will govern, and the plant will not have to be updated to the latest standards.

(b)(2), If the facility had not been in an operational condition at the time of retirement, had last operated more than twenty-one (21) calendar years prior to the retirement date, is not intact, and / or has had significant decommissioning and / or dismantling activities commence, the licensee shall still have the option to return the facility to a fully operational status, provided the following actions are accomplished: (a), The facility is repaired or re-built to the safety standards that had been in place at the time the facility had last operated. The facility will not have to be updated to the latest standards. (b), Furthermore, the facility will have to successfully pass a safety inspection appropriate to the degree of repairs or reconstruction that had been performed. At the very least, this inspection would be a general safety inspection, as above, if the plant had been largely intact and well maintained, but it may range all the way up to the typical testing required for a new build, if significant reconstruction or repairs had to be performed.

The Petitioner also requests the Nuclear Regulatory Commission to, (2), Generally allow the owner and / or operator of a nuclear power plant a fair, reasonable, and unobstructed opportunity to return a retired facility to full operational status, even if the operating license for the facility had previously been surrendered. The facility will only have to meet the safety standards that had been in place at the time the facility had last operated, and not the latest standards.

The Petitioner makes the above request of the Nuclear Regulatory Commission in accordance with the National Environmental Policy Act, U.S. Code Title 42, Chapter 55, Paragraph 4321. In general, when a nuclear power plant closes, it is typically replaced with natural gas fired electrical generation, which produces much higher air pollution and carbon dioxide emissions

than the nuclear source that it replaced. This situation runs counter to the spirit and intent of Paragraph 4321, which aims to: *"declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere, and stimulate the health and welfare of man."* Given the fact that the carbon dioxide emissions of this new natural gas plant are about 60% of those of an equivalent coal plant, (up from the mere 5% or so that the nuclear plant used to generate), replacing shuttered nuclear plants with natural gas fired plants is definitely a step backwards from a climate standpoint. Also, in light of the now well – understood link between carbon emissions and global warming, the importance of Paragraph 4321 takes on a whole new meaning; lowering carbon dioxide levels in the atmosphere, (not raising them), is a necessary step to *"prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man"*. Keeping the ultra – clean, and virtually carbon – free, nuclear generating stations on-line is one way to help accomplish this step.

In addition to Paragraph 4321 above, the Petitioner also cites the Clean Air Act, U.S. Code Title 42, Chapter 85, Subchapter I, Part A, Paragraph 7401. Sections (a)(2) and (c) of this paragraph also apply; *"the growth in the amount and complexity of air pollution brought about by urbanization, industrial development, and the increasing use of motor vehicles, has resulted in mounting dangers to the public health and welfare, including injury to agricultural crops and livestock, damage to and the deterioration of property, and hazards to air and ground transportation."* This does apply to the rising levels carbon dioxide in the atmosphere, which are likely to endanger public health and welfare, injure agricultural crops and livestock, and damage property, through rising air temperatures, which will likely cause melting ice sheets, rising ocean levels and coastal flooding, along with more severe wild fires, hurricanes, and droughts. We have witnessed many of these events first hand in recent years and months.

Next, Section (c) also applies; i.e. *"A primary goal of this chapter is to encourage or otherwise promote reasonable Federal, State, and local governmental actions, consistent with the provisions of this chapter, for pollution prevention."* Promoting the continued operation of nuclear generating stations would certainly constitute an action that would help prevent pollution.

In summary, if 10 C.F.R. Part 52.110(b) were amended as requested above, it may potentially enable previously – shuttered nuclear generating stations to be returned to service, without imposing unreasonable cost burdens on their operators. If this were to occur, potentially several gigawatts of ultra – clean, and very low – carbon, electrical generating capacity could be restored to the electrical grid, which would help to reduce carbon dioxide levels in the atmosphere. This may eventually reduce global temperatures, which may help mitigate some of the most adverse effects of global warming discussed above, thereby promoting human well – being, in accordance with Chapters 55 and 85 of Title 42.

The above - proposed change would allow recently shuttered plants, such as Kewaunee, Vermont Yankee, San Onofre, Crystal River, and others, to be permitted to simply re-start, should their owners decide to pursue this approach. It would also reduce the risk of losing additional nuclear plants in the future. The Petitioner believes that this approach would be safe, which no additional risk to the public, since the plants had operated satisfactorily prior to shut-down, were well maintained, and had good overall safety records. This approach would also spare the plant owners

the enormous cost of upgrading the plants to the latest standards. Otherwise, re-starting the plants would probably be cost prohibitive.

Existing nuclear power plants are perhaps one of the best tools that our country currently has to help deal with the threat of climate change. They are here and ready to run now. Relatively little time and money (compared to a new build) needs to be invested to get them back on line. When compared to renewables, they have great capacity in a relatively compact footprint, and essentially constant output. They provide clean, carbon-free energy at over a 90% capacity factor. These are their important attributes that we should recognize, and strive to do everything we can, as a nation, to save them and keep them on-line. The carbon-free generating capacity that we lost as a result of the closures of Kewaunee, Vermont Yankee, San Onofre, and Crystal River negated a considerable amount of the climate progress that we made in recent years by adding renewables to the grid.

It would not be unreasonable to say that this is somewhat of a priority situation, given the rate at which climate change is beginning to accelerate. It is also the "low hanging fruit", when compared to other options. Allowing these plants to re-start would restore a significant amount of clean, carbon-free capacity to the grid, today, and for literally "pennies on the dollar", compared to building new nuclear, or trying to replace the same capacity with wind or solar sources. Replacing lost nuclear capacity with natural gas or coal fired generation should be considered poor practice from a climate standpoint. This simple change should be considered a "win-win" for everyone, with no real negatives or downsides. It could potentially open the door for over 4,000 megawatts of clean, carbon-free electricity to be restored to the grid, without compromising public safety.

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 renewable or new nuclear 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.

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

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

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

$63(\$2.2 \text{ billion}) = \$139 \text{ billion} \leftarrow \text{Cost of 63 Ivanpahs}$

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 billion

Time Frame:

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

Safety Inspection Alternative:

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 the re-start. When compared to a new nuclear build, cost of a re-start is:

$\$26.4\text{k million} / \$7.5 \text{ million} = 3520 \leftarrow$ It would be 3,520 as expensive to rebuild the (3) plants than to simply restart the existing plants.

When compared to 63 Ivanpahs,
 $\$139\text{k million} / \$7.5 \text{ million} = 18,533 \leftarrow$ It would be 18,533 as expensive to replace the lost capacity with 63 Ivanpah solar plants than to simply restart the (3) existing nuclear plants.

Time Frame:

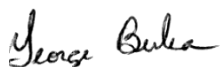
The inspections required for a re-start could probably be accomplished in under (6) months, versus the (10) years required for a new build.

$10/0.5 = 20 \leftarrow$ It would take twenty times as long to rebuild the lost capacity than to simply restart the existing nuclear plants.

Finally, there does not appear to be any good or legitimate reason for this policy, which prohibits previously shuttered nuclear power plants from ever restarting again, once they surrender their operating license. This policy runs counter to the original principles upon which the Atomic Energy Commission, the predecessor to the Nuclear Regulatory Commission, was founded. These principles were to not only regulate the safety of nuclear power, but also to encourage its use, and to not impose excessive requirements that would inhibit the growth of the industry. This is also why this policy should be changed – to be better aligned with the original intent and spirit of the Atomic Energy Commission.

If you are tempted to simply dismiss this petition, please consider soliciting input on it first from either the Environment and Public Works Committee, the Department of Energy, or other branches of government tasked with addressing climate change. You may find that there may be widespread support for the ideas in this petition, since many people are starting to recognize the valuable contribution that nuclear power makes in the clean electricity arena.

Thank you,



-George Berka

RulemakingComments Resource

From: GEORGE BERKA <gberka57@comcast.net>
Sent: Wednesday, December 26, 2018 10:43 AM
To: RulemakingComments Resource
Subject: [External_Sender] Petition for Rule Making
Attachments: NRC Petition.pdf

Good Morning,

I am hereby submitting a petition for rule making. The petition is attached.

Thank you,

-George Berka