

From: Kevin Kamps <kevin@beyondnuclear.org>
Sent: Monday, October 5, 2020 4:25 PM
To: WCS_CISFEIS Resource
Subject: [External_Sender] Beyond Nuclear's 2nd set of public comments, re: Docket ID NRC-2016-0231, and report number NUREG-2239, NRC's ISP/WCS CISF DEIS -- Risks of "Routine" or "Incident-Free" Shipments Nonetheless Being Like "Mobile X-ray Machines That Can...
Attachments: DC States_Affected.pdf; VA States_Affected.pdf; Maryland States_Affected.pdf; Figure 4.2-3 Transportation Routes Page 4-65 Revision 0 of ER Waste Control Specialists, LLC, Consolidated Interim Spent Fuel Storage Facility Environmental Report, Rev. 0, Chapter 4, 1 of 2. - ML16133A158.pdf

Submitted via: <WCS_CISF_EIS@nrc.gov>

Dear NRC Staff,

This is my 2nd set of public comments in this proceeding. My 1st set was submitted verbally during the call-in session on October 1, 2020.

I submit these comments on behalf of our members and supporters, not only in New Mexico and Texas, near the targeted ISP/WCS CISF site, but across both of these states, and the rest of the country, along road, rail, and waterway routes that would be used for high risk, highly radioactive waste shipments to ISP's CISF, as well as to Yucca Mountain, Nevada, on Western Shoshone land -- wrongly and illegally assumed by ISP/WCS, as well as by NRC, to someday become a permanent disposal repository.

The following subject matter has gotten little to no attention in NRC's ISP/WCS CISF DEIS, a far cry from NEPA's legally binding "hard look" requirement.

Risks of "Routine" or "Incident-Free" Shipments Nonetheless Being Like "Mobile X-ray Machines That Can't Be Turned Off," and Risks of Externally Contaminated Shipments

Even "routine" or "incident-free" shipments of irradiated nuclear fuel carry health risks to workers and innocent passers by. This is because it would take so much radiation shielding to completely hold in the gamma and neutron radiation, being emitted by the highly radioactive waste, that the shipments would be too heavy to move economically. So NRC has compromised, and "allows" for or "permits" a certain amount of hazardous gamma and neutron radiation to stream out of the shipping container.

NRC's regulations allow for up to 10 millirem per hour (mR/hr) of gamma and/or neutron radiation to be emitted, about six feet (two meters, 6.6 feet) away from a shipping cask's exterior surface. That's about one to two chest X-rays worth of gamma and neutron radiation, per hour of exposure.

Since the radiation dissipates with the square root of the distance, this means that NRC's regulations "allow" for up to 200 mR/hr, at the surface of the cask's exterior. That's 20 to 40 chest X-rays worth of gamma and neutron radiation, per hour, which NRC "allows" to stream out, right at the cask's surface.

(Actually, over the years and decades, even the harmful impacts of medical X-rays have been better appreciated and acknowledged, and actions have been taken to mitigate that health damage. That is, the dosage involved in medical X-rays has been decreased, in order to limit the harm done. 5 to 10 mR for a single chest X-ray may have been the norm, decades ago, but medical professionals today try to perform X-rays of lesser dosage than that, in order to limit any unnecessary harm done to the patient's health. Thus, the ballpark figures given above, of 1 to 2 chest X-rays worth of gamma and/or neutron radiation at 6.6 feet, and 20 to 40 chest X-rays worth of gamma and neutron radiation, at the container's exterior surface, actually understate the risk. Compared to today's chest X-rays, the comparison would be even worse.)

NRC has done a cost-benefit analysis – the cost, to human health; the benefit, to the nuclear power industry's bottom line – and deemed these exposure levels "acceptable" or "permissible." ("Permissible" or "acceptable" should never be confused with "safe" or "harmless" – exposures to 200 mR/hr, or even 10 mR/hr, still carry health risks. After all, any level of exposure to hazardous ionizing radiation, no matter how small the dose, has long been confirmed to cause cancer, and other maladies. For more information, see: [>, a Nuclear Information and Resource Service press release about the 2005 National Academy of Science Biological Effects of Ionizing Radiation report.](#))

[The humans actually harmed by these exposures to hazardous radioactivity – related to the industry's NRC-approved, unnecessary shipments to CISFs, for example – might beg to differ! But of course, any negative health impacts associated with irradiated nuclear fuel shipments will not be closely tracked \(or tracked at all\) by NRC, or any other government agency for that matter. NRC and industry almost always downplay the health risks, and would almost certainly deny any connection between such exposures and negative health outcomes.](#)

[Six feet away could affect a person standing beside a train track, as the train goes by. Some real world examples of this situation include the Takoma Metro Station near Takoma Park, Maryland – the Red Line Metro Station platform is right beside the CSX railway, which is targeted for trains to haul irradiated nuclear fuel from the Calvert Cliffs, MD and North Anna, VA nuclear power plants, such as bound for Holtec/ELEA's proposed CISF in NM, as well as ISP/WCS's proposed CISF in TX.](#)

[\(As Jack Edlow of Edlow International challenged the veracity of my claim re: Calvert Cliffs and North Anna irradiated nuclear fuel shipments passing through Takoma Metro Station en route to proposed dumps out West, please see Page 20 of 20 on the PDF Counter in this document:](#)

[<http://www.state.nv.us/nucwaste/news2017/pdf/Cities_Affected.pdf>](http://www.state.nv.us/nucwaste/news2017/pdf/Cities_Affected.pdf)

The map shows a rail route for hauling irradiated nuclear fuel through metro Washington, D.C., including Takoma Metro Station -- just shy of Silver Spring, Maryland -- bound for the Yucca

Mountain, Nevada dump. This is a State of Nevada Agency for Nuclear Project's map, based on the U.S. Department of Energy's Final Supplemental EIS for the Yucca dump, published in 2008. Significantly, NRC itself cites this 2008 DOE Yucca FSEIS in its 2020 ISP/WCS CISF DEIS.

It must be pointed out that as far east as metro Washington, D.C., the routing would be identical, whether shipments were bound for Holtec's CISF in NM, ISP's CISF in TX, or the Yucca Mountain, NV dump, on Western Shoshone land.

I have also attached a copy of this map, in PDF format, to this email.

Please note that the route passing through Takoma Metro Station, coming from Virginia to the southwest, would haul North Anna nuclear power plant irradiated nuclear fuel. This is clearly shown on Page 41 of 45 on the PDF Counter, in this document:

<http://www.state.nv.us/nucwaste/news2017/pdf/States_Affected.pdf>

I have also attached this State of Virginia route map, in PDF format, to this email.

Similarly, please note that the route passing through Takoma Metro Station, coming from Maryland to the east, would haul Calvert Cliffs nuclear power plant irradiated nuclear fuel. This is clearly shown on Page 19 of 45 on the PDF Counter, in this same document:

<http://www.state.nv.us/nucwaste/news2017/pdf/States_Affected.pdf>

I have also attached this State of Maryland route map, in PDF format, to this email.

It is disconcerting that Edlow International could well be hired by ISP to be involved in the hauling of irradiated nuclear fuel to the WCS, TX CISF, and yet its CEO and President, Jack Edlow, would publicly state false information regarding routing on the NRC's call-in session on October 1, 2020. The falsehood of Jack Edlow's statement is shown by the documentation cited above.

The State of Nevada Agency for Nuclear Project's route map documents, as well as its methodology, is posted online at the following link, under the year 2017:

<<http://www.state.nv.us/nucwaste/trans.htm>>.)

Although further than six feet away, residences located immediately adjacent to these same CSX rail lines in Tacoma, D.C. mean that those living there could well be exposed to gamma and neutron radiation, although at a lower dose rate (again, the dose rate decreases inversely with the square root of the distance). However, residents can be expected to be present in their homes a lot more often than commuters standing on a Metro platform – including during sleep hours, when trains carrying irradiated nuclear fuel could still go by. And of course, residents along these tracks, could also be commuters standing on the platform, leading to multiple exposures in their daily (and nightly) lives, for years or even decades on end, during an ISP CISF shipping campaign.

Trains pausing next to commuter platforms or residences will prolong and exacerbate these hazardous and potentially injurious exposures. Paused trains – even ones carrying hazardous cargoes like highly radioactive waste – are commonplace in the U.S. Pauses can sometimes last a long time.

Lead automobiles (the ones nearest the tracks) stuck by paused trains at railroad crossings could mean the occupants of those vehicles are exposed to prolonged doses of intense gamma and neutron radiation at such a close range distance. Even a rolling train car would emit a certain dose as it passed by, to lead car occupants stopped nearest the tracks.

Similar situations will arise across the U.S. Innocent passers by, whose daily lives bring them in close proximity to railways, waterways (barges), or roadways (heavy-haul trucks, and also Legal Weight Trucks on interstates or smaller roadways, if ISP chooses to use LWTs) that would be used to ship irradiated nuclear fuel, mean that ordinary people would be exposed to hazardous gamma and neutron radiation in some amount greater than zero – perhaps repeatedly, over the course of years, or even decades, during a ISP CISF shipping campaign.

It has been known since the 1950s, thanks to the good work of epidemiologist Alice Stewart and her team, that a single X-ray to the fetus in the mother's womb significantly increases the baby's risk of contracting cancer in the future. Thus, these Mobile X-ray Machines That Can't Be Turned Off would represent a significant risk to such vulnerable persons as a pregnant woman, and the fetus in her womb.

The 200 mR/hr “acceptable” dose rate at the surface of shipping casks would most likely impact workers – locomotive engineers, railway workers, inspectors, security guards, police, firefighters, emergency responders, etc.

However, when, in 2003, the Big Rock Point reactor pressure vessel (albeit so-called “low” level radioactive waste, it still serves as a cautionary tale) was shipped by heavy-haul truck into Gaylord, Michigan to be loaded onto a train, for its shipment by rail to Barnwell, South Carolina, to be buried in a leaking ditch, neither the nuclear utility, Consumers Power, nor the NRC (nor any other federal or state agency), nor local law enforcement, created a security or safety or health perimeter around the shipping container. As if it were a parade, onlookers were allowed to simply approach the shipping container, walk right up to it, and even touch it. In fact, a parade would probably have had better health, safety, and security precautions in place! (See 2003 written entries, as well as a photo, about this and other troubling incidents that occurred during this single shipment, posted online at:). ISP's CISF would involve up to several thousands of in-bound irradiated nuclear fuel shipments into the TX *de facto* permanent, surface storage, parking lot dump; and at least an equal number out, *if* the waste ever were to leave. (ISP and NRC both erroneously simply assume Yucca Mountain, Nevada -- Western Shoshone land, by treaty right - will be the permanent burial site.)

However, as expert witness Bob Alvarez has testified on behalf of CISF opponents in the NRC ASLB's ISP proceeding, the several thousands of storage canisters could be subdivided into as many as tens of thousands of smaller diameter TADs (Transport, Aging, and Disposal canisters), for the out-bound shipment from the ISP CISF in TX, to the falsely assumed dump-site at Yucca

Mountain, Nevada. This would mean many tens of thousands of TAD canister shipments, each one "allowed" or "permitted" to emit 10mR/hr at a distance of 6.6 feet away, or up to 200 mR/hr at the canister overpack's surface.

Likewise, Bob Halstead, several years ago, was able to guide a camera crew deep into the heart of a rail yard, just off downtown Chicago, IL, that would be used to temporarily store (albeit, "temporarily" could last for days) train cars holding irradiated nuclear fuel. Security was nowhere to be seen. (Halstead, then long serving as transport consultant to the State of Nevada Agency for Nuclear Projects, later long served as the agency's director, the position from which he recently retired.) What this also showed was, even unsuspecting "trespassers" -- such as youth exploring the railyard, or taking a shortcut -- could also be exposed to higher doses of ionizing radioactivity, if they were to encounter an irradiated nuclear fuel shipping cask. Graffiti often seen on the sides of freight rail cars shows that persons have had total access to those cars, for prolonged periods of time.

Similarly, Rick Hind of Greenpeace U.S.A. guided a *Wall Street Journal* reporter deep into the heart of underground train tunnels under Washington, D.C. The graffiti and art on the walls showed clearly that the tunnels are frequented by human beings. (Hind was showing the reporter how insecure such tunnels, even in the nation's capital, are to potential security risks, even as hazardous train cargoes – including chlorine shipments, and perhaps someday soon, irradiated nuclear fuel – pass by.)

In these ways, that 200 mR/hr "permissible" dose rate could impact not only workers, but even members of the public -- such as graffiti artists in Washington, D.C.'s train tunnels, or in rail yards across the country!

In this sense, even "routine" or "incident-free" shipments of irradiated nuclear fuel can be considered as similar to mobile X-ray machines that can't be turned off, a phrase describing the concept first expressed by Lauren Olson, a supporter of NIRS (Nuclear Information and Resource Service).

To make matters worse, there have been large numbers of shipments, externally contaminated with radioactivity, making their actual dose rates much higher – and thus more hazardous – in serious violation of the already compromised "permissible" or "acceptable" levels.

Areva – now renamed Orano, and a major partner in the ISP CISF proposal targeted at WCS, TX – at its home base in France, experienced just such a plague or epidemic of externally contaminated shipments. A full 25% to 33% of Areva's irradiated nuclear fuel shipments, into its La Hague reprocessing facility, were externally contaminated, for years on end, above "permissible" levels. This amounted to many hundreds of individual shipments, contaminated above "permissible" levels, over the course of several years. On average, the shipments were giving off radiation dose rates 500 times the "permissible" level; in one instance, a shipment was emitting radiation 3,300 times the "acceptable" level.

Environmental watchdogs and journalists revealed this contaminated shipment scandal. See the WISE-Paris write up, Transport Special - Plutonium *Investigation* n°6/7, posted at <http://www.wise-paris.org/> under Bulletins.

But such externally contaminated shipments have happened in the U.S., as well. Halstead documented this in a report prepared for the Nevada State Agency for Nuclear Projects in 1996. It is entitled "Reported Incidents Involving Spent Nuclear Fuel Shipments, 1949 to Present." 49 "surface contamination" incidents are documented. This report is posted online at: <http://www.state.nv.us/nucwaste/trans/nucinc01.htm>. Please see the full text of that report at the hyperlink provided.

It must be pointed out that, per the transport route map provided by ISP in its Environmental Report (ER; Figure 4.2-3, Transportation Routes, on Page 4-65 in the Revision 0 of the ER), not only would long stretches of Oklahoma and Texas be exposed to incoming shipments of irradiated nuclear fuel from eastern nuclear power plants (the one on the map accounted for is Maine Yankee, depicted by the blue line, "Maine Yankee to WCS") but scores of nuclear power plants to the east are not accounted for on the map), but those very same communities would then be exposed to outgoing shipments (depicted by the light green line, "WCS to Yucca Mountain," including not only those that originated at eastern reactors, but also irradiated nuclear fuel from western reactors, such as the route depicted in red, "San Onofre to Yucca Mountain," as but one example). The overlap of incoming eastern shipments (blue line, "Maine Yankee to WCS"), with outbound to Yucca Mountain, Nevada shipments (light green line, "WCS to Yucca Mountain"), are depicted by a dark green line on the figure in the ER. The long stretches of Texas and Oklahoma, depicted along that dark green colored route, show the communities that would be hit, both coming and going, by ISP's transport schemes. And a part of that LARGE impact would be to people's health, due to the gamma and neutron radiation emissions of shipments, even during "incident-free" or "routine" shipments. I have attached a PDF of this figure to this email.

That "double whammy," suffered by Texans and Oklahomans who live in communities along both the "Maine Yankee to WCS," as well as the "WCS to Yucca Mountain," transport routes, shows the nonsensical nature of CISFs, doubling transport risks for certain communities, such as these, for no good reason whatsoever.

It should also be noted that Figure 4.2-3 accounts for merely 4 atomic reactors across the U.S., one at Maine Yankee, and three at San Onofre. What about the 125 additional U.S. reactors not accounted for on the map? Another two reactors will have to be accounted for, if Vogtle Units 3 and 4 in GA actually operate and generate irradiated nuclear fuel. That would then be 127 reactors across the country not accounted for by ISP's Fig. 4.2-3 in Rev. 0 of its CISF ER.

But then again, shockingly, NRC did not even include ISP's woefully inadequate route map in its own DEIS. NRC's secrecy concerning irradiated nuclear fuel transport routes into and out of the ISP CISF is shocking and outrageous, as well as a violation of NEPA. Apparently, NRC would like to keep the American people in the dark about the ISP CISF transport routes passing through, or near, their communities. This cannot stand.

Please address your woefully inadequate "hard look" under NEPA, re: this health- and environmentally-significant subject matter above.

And please acknowledge your receipt of these comments.

Thank you.

Sincerely,

Kevin Kamps, Beyond Nuclear

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Beyond Nuclear aims to educate and activate the public about the connections between nuclear power and nuclear weapons and the need to abolish both to safeguard our future. Beyond Nuclear advocates for an energy future that is sustainable, benign and democratic.

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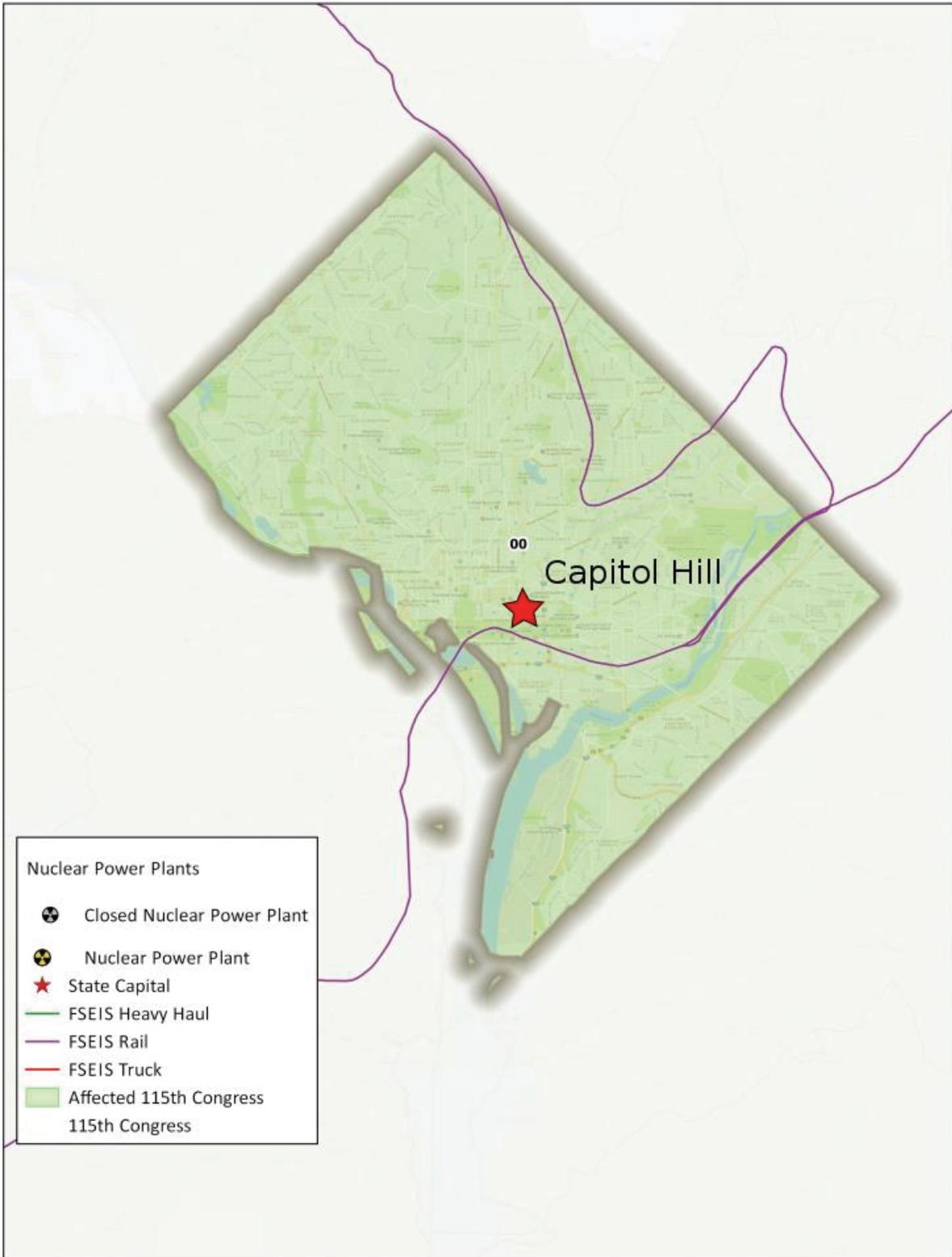


Figure 7 FSEIS Routes through the District of Columbia

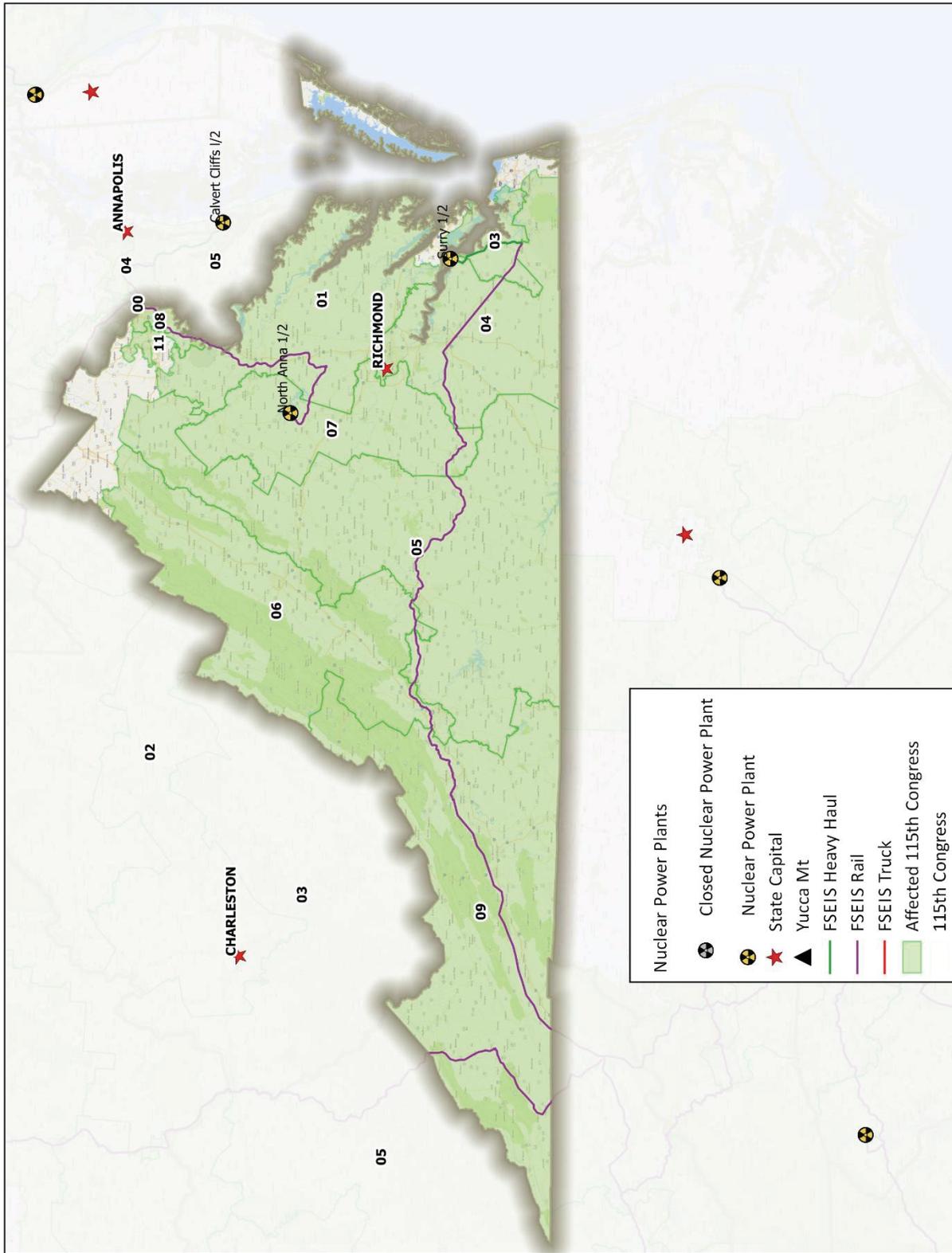


Figure 41 FSEIS Routes through Virginia

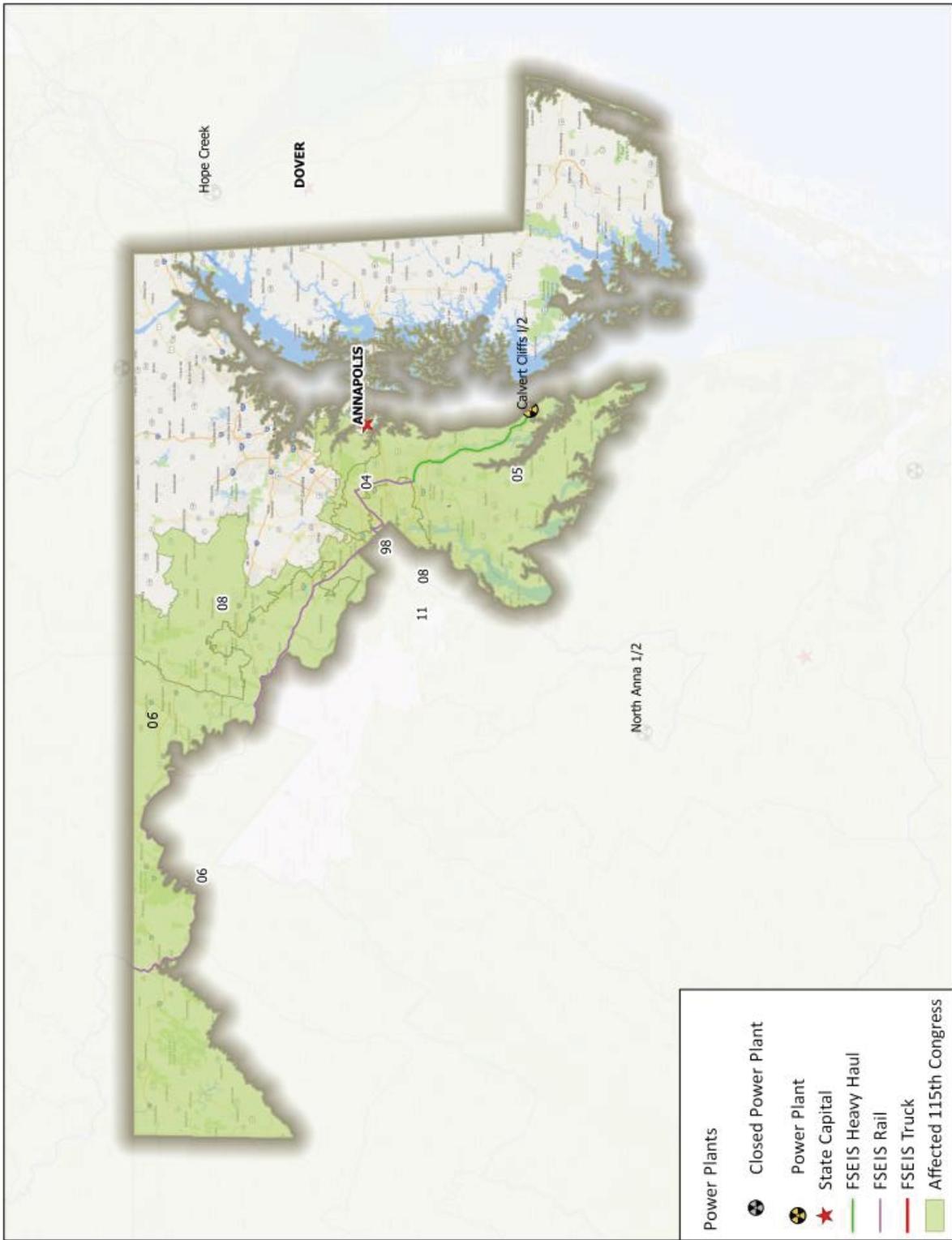
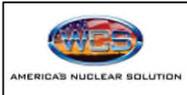


Figure 19 FSEIS Routes through Maryland



Title: Figure 4.2-3
Transportation Routes



Explanation:	
	Maine Yankee to WCS
	WCS to Yucca Mountain
	San Onofre to WCS