

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

SPENT FUEL SOLUTIONS  
INFORMATIONAL WEBINAR: NUCLEAR POLICY REFORM  
Via Zoom  
TRANSCRIPT OF MEETING  
October 22, 2025

1 SPENT FUEL SOLUTIONS

2 INFORMATIONAL WEBINAR: NUCLEAR POLICY REFORM

3

4

5

6

7

8

9

10 Transcript of video-recording meeting via Zoom  
11 commencing at 11 a.m., Wednesday, October 22, 2025.

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1 WEBINAR SPEAKERS:

2 JESSICA LUTERNAUER - (COALITION MANAGER FOR SPENT  
3 FUEL SOLUTIONS)

4 ROD BALTZER - (CHIEF EXECUTIVE OFFICER OF DEEP  
5 ISOLATION AND CHAIR OF THE U.S. NUCLEAR INDUSTRY  
6 COUNCIL'S BACK-END WORKING GROUP)

1 Via Zoom, Wednesday, October 22, 2025

2  
3 JESSICA LUTERNAUER: All right, let's get  
4 started.

5 Hello, everyone, and thank you so much for  
6 joining us today.

7 My name is Jessica Luternauer, and I serve as  
8 Coalition Manager of Spent Fuel Solutions.

9 As you know, we have these webinars on a  
10 quarterly basis, and the purpose of them is really  
11 twofold.

12 One, we want to raise awareness about the spent  
13 fuel challenge.

14 We think that it suffers from a lack of  
15 attention and it's important that we draw attention to  
16 it in order to advocate for legislative reform.

17 We're also working with the Department of Energy  
18 on their work to site consolidated storage using a  
19 collaboration-based approach and we want to be able to  
20 highlight some of these issues through our webinar  
21 series.

22 So with that said, I am pleased to introduce our  
23 speaker today.

24 Rod Baltzer is CEO of Deep Isolation, which is a  
25 company that provides innovative solutions for nuclear

1 waste disposal with an emphasis on environmental  
2 protections and community partnerships.

3 He also serves as chair of the U.S. Nuclear  
4 Industry Council's Back-End Working Group, which was  
5 formed to identify and guide recommended actions to  
6 establish a comprehensive federal program for spent  
7 nuclear fuel.

8 Both Deep Isolation and USNIC are Spent Fuel  
9 Solutions members and today we're here to talk about  
10 the Back-End Working Group's paper that they recently  
11 produced for policies on spent fuel management.

12 Many of these policies are consistent with Spent  
13 Fuel Solutions' policy principles that our executive  
14 board adopted, and we look forward to learning more  
15 about how these policies can help us build a successful  
16 spent fuel management program in the U.S.

17 So as always, we'll start off with a  
18 presentation followed by a Q&A.

19 If you do have questions, please go ahead and  
20 submit them in the chat and we will do our best to get  
21 to all of them.

22 We did receive quite a few questions in advance,  
23 so we'll try to get to as many as possible.

24 So with that, please join me in welcoming Rod  
25 Baltzer.

1           ROD BALTZER: Thank you, Jessica.

2           And yeah, I'm glad to be here and represent  
3 USNIC.

4           And as you mentioned, both Deep Isolation, my  
5 company, and USNIC are members of the Spent Fuel  
6 Solutions Coalition and so glad to support that.

7           I, I will note U.S. Industry Council is made up  
8 of industry related to companies that are interested in  
9 the front end, the back-end nuclear reactor technology  
10 and others.

11           And in the Back-End Working Group is  
12 specifically on the back end.

13           How do you store it, transport it, dispose of it  
14 in a mined repository?

15           We're a borehole reprocessing, recycling, and  
16 we're going to talk a little bit about probably all of  
17 that as we go through.

18           So our Back-End Working Group did develop some  
19 information and a plan for the back end and we'll,  
20 we'll just walk through those slides today.

21           So I, I think as most people have seen, you  
22 know, the AI data center, just a demand for more  
23 electricity and more energy has prompted a resurgence  
24 in nuclear, a lot more interest in that.

25           We've got both the legacy reactor fleet, new

1 advanced reactors and smaller modular reactors, new  
2 reprocessing and recycling facilities and all of that  
3 needs back-end solutions.

4 You, you can't just kind of wave a magic wand  
5 and it disappears there.

6 There's something that will, that has to be done  
7 here.

8 We've already generated over 90,000 metric tons  
9 of spent fuel.

10 This is stored on 70 sites in 35 states and  
11 there's no permanent disposal facility.

12 The U.S. has, you know, attempted and, and just  
13 has not made progress there.

14 So taxpayer, taxpayers are getting the brunt of  
15 this.

16 The standard contract noted that, you know, DOE  
17 would start picking that fuel up in 1998 and the  
18 utilities signed on to that and started paying a fee.

19 But DOE never made progress.

20 The Nuclear Waste Policy Act said you can only  
21 dispose of it at Yucca Mountain, Nevada.

22 It was, I'll say, contentious.

23 And it has been defunded and there's really been  
24 no work on that since 2008.

25 Meanwhile, we've been, utilities have been suing

1 under that standard contract and getting their  
2 liabilities for storage, protracted storage, paid and  
3 that liability is now estimated to be over \$150 billion  
4 by the time it's all done and said.

5 So you know, this is \$2,000,000 a day in  
6 judgments related to storage that's increasing as more  
7 fuel gets put into spent fuel pools and into dry cask.

8 And, and it was really a cost to the U.S.  
9 because we used to be leaders in nuclear.

10 We used to be leaders in disposal and back-end  
11 solutions, and we really lost that.

12 And so we've lost that to China and Russia and,  
13 and it's caused us to have some issues as we go out and  
14 try to create these relationships with countries.

15 You know, if you have a nuclear relationship  
16 with the country, that's 100-year relationship.

17 You've got, you know, the time to site and  
18 build that power plant, you've got 60 years of  
19 operations, and then you've also got the disposal of  
20 that waste at the end of it.

21 So through that entire process is a really good  
22 opportunity to build a strong relationship.

23 But if they now have to go to Russia or China  
24 because they're the experts, we lose out on that.

25 And so it also impacts us as we go through

1 that.

2 We have seen that the new Trump administration  
3 has been issuing a lot of executive orders.

4 There were four of those signed in May that had  
5 to do with nuclear and resurgence there.

6 And so one of those related specifically to  
7 spent nuclear fuel and high-level waste related to a  
8 national disposal priority.

9 It mandated that DOE put a report out within 240  
10 days.

11 So I think that's due in January and, and talk a  
12 lot about reprocessing, recycling, but have a disposal  
13 solution for that waste and, and what is the policy and  
14 the plan as we go forward with that?

15 USNIC believes, yes, we need to absolutely get  
16 something done and get started on it now.

17 We just can't wait anymore for this.

18 We also think there's a lot of changes that  
19 could happen that could really facilitate this.

20 One of the things is an independent waste  
21 management entity.

22 So when you look at the Department of Energy,  
23 that is the entity right now, the government agency  
24 responsible for nuclear waste, and it's got a lot of  
25 other responsibilities.

1           It has fossil and other clean energies.

2           It has all the national lab programs under it.

3           It's a large, vast agency.

4           And so spent fuel is one out of the thousand  
5 items that they need to do every day.

6           We have an entity that's really mission driven,  
7 accountable, and has sufficient funding to just focus  
8 on spent fuel, and and that is their only job.

9           We also want them to partner with industry.

10          There are a lot of things that we do in the  
11 nuclear industry that we think would benefit something  
12 like that.

13          We also, you know, collaboration-based siting.

14          So we've tried top down of you know kind of  
15 forcing it into a place that did not work.

16          We think you really need to have communities  
17 kind of opt into a process and and build that trust and  
18 relationship, have that entity with stable funding that  
19 can be around and build that trust over longer periods  
20 of time.

21          There's a lot of opportunity for public private  
22 partnerships.

23          As you look at SpaceX or other similar things,  
24 we've seen where innovation in the private industry has  
25 been able to really advance technology, reduce cost and

1 and make things kind of simpler or or or leverage some  
2 of those new technologies, accelerate the development.

3 If we can do that for the back end and disposal  
4 of this fuel and, and ultimate solutions there, we  
5 think that would be highly beneficial as well.

6 We also want to make sure this is a, a, a big  
7 tent, that that there's a lot of things under it.

8 It's more than just Yucca Mountain, Nevada.

9 And so, you know, we need to revisit some of the  
10 site studies done in the past and make sure this is  
11 adaptable.

12 So as we talked about that, there's new  
13 technologies that have come along, example deep  
14 borehole disposal.

15 I will note that if I do talk about deep bore  
16 holes and and deep isolation, I'll hold this hat up to  
17 let you know that it's not USNIC opinion.

18 This is Rod Baltzer wearing a different hat  
19 opinion literally and figuratively.

20 But but that's a private sector-led generally  
21 TRL at technology readiness level of 6, which means  
22 it's ready to start licensing kind of process and we've  
23 got a technology, or a sorry, a Texas demonstration  
24 center.

25 And I'm happy to talk about that in Q&A if

1 there's questions.

2           Used fuel reprocessing and recycling, these are  
3 companies like Oklo, Curio, and SHINE that are leading  
4 that in the U.S.

5           It will reduce the waste volume and it may even  
6 reduce the long-lived aspects of that, but it won't  
7 completely get rid of disposal.

8           We still need a disposal solution.

9           And so there's some benefits out of that, but it  
10 all works together in conjunction with disposal at the  
11 end of the day.

12           Consolidated interim storage is also something  
13 that would be beneficial.

14           So this would be taking those, you know, 70 plus  
15 sites across the U.S. and putting those under one or or  
16 just a few centralized fuel storage locations.

17           This could save taxpayer dollars as you have one  
18 security force instead of 70 security forces, one  
19 maintenance programs instead of 70 maintenance  
20 programs, that kind of thing.

21           It's a near-term like stop gap measure, but  
22 doesn't replace the ultimate need for disposal as we go  
23 through that.

24           So how do you get this all done?

25           So we think there's 4 pillars.

1           One is institutional reform.

2           Get that independent waste management agency,  
3 get some stable funding and an independent governance  
4 so that you really have an ability to do a long-term  
5 thought-out program and stick with it.

6           You want to make sure you're educating and  
7 incentivizing communities.

8           They don't know what the safety case is or how  
9 this works or what that might look like then, what kind  
10 of benefits that community could see and, and what kind  
11 of risks there are.

12          And so have that discussion and, and really get  
13 into it and make sure everybody's aware of of what that  
14 can mean.

15          Three is the technology innovation.

16          We really want to see kind of hands on, let's  
17 let's start building stuff so people can come kick the  
18 tires.

19          So pilot projects, cast demonstrations and then  
20 these new advanced nuclear reactors or reprocessing  
21 facilities as they start to go up, make sure people can  
22 come and tour those and see what they're all about.

23          And then last, the policy support.

24          So technology neutral, let's not pick a  
25 solution, but let's make sure we've got a, a broad

1 regulatory framework that will fit many different  
2 solutions that, that may be beneficial over various  
3 different times.

4 Make sure NRC and EPA are in alignment.

5 There's, there's a role there, both of them  
6 have.

7 And then make sure that licensing doesn't take  
8 too long, that we can actually get this done and, and  
9 make progress on it.

10 And so as we phase that in, you know, phase one,  
11 get the entity set up, get the demonstrations done.

12 Phase two, get that site siting started, the  
13 technology launched.

14 And then phase three, implement that.

15 There are some barriers.

16 We've got some hiccups in the U.S.

17 So the Nuclear Waste Policy Act, basically  
18 there's a a couple of things that can block some of  
19 that progress.

20 So Section 161 says that you you can't do  
21 anything but Yucca Mountain.

22 There has to be congressional approval to start  
23 a second repository.

24 You don't have to kill Yucca Mountain, but you  
25 can't start anything else.

1           So we need to open that up so you can start  
2 something else.

3           Let's let's not just pitch ourselves to one  
4 thing.

5           The other is Section 141(g) and it's allowing  
6 interim storage at a disposal facility and so doing  
7 doing something else as well.

8           But we want to make sure those private public  
9 partnerships can happen and do that in 180 days.

10          Let's not dillydally.

11          Let's let's do something about it.

12          So key takeaways, independent waste management  
13 organization, trust-based siting and then technology  
14 and, and we think that technology is ready to go.

15          So you know, we, we hope everybody on the call  
16 would be supportive of this and obviously we're going  
17 to have a lot of time for Q&A and we'll get through  
18 that.

19          If you haven't seen this policy or you want to  
20 please go to the USNIC website.

21          It's under the Back-End Working Group section.

22          You can scan that QR code.

23          I'll leave that up for a little bit.

24          But with that, that's the end of my prepared  
25 remarks.

1 I am certainly happy to take questions.

2 JESSICA LUTERNAUER: Thank you so much, Rod.

3 So as I mentioned, we will try to get to  
4 audience questions.

5 Please leave those in the chat if you have any.

6 But we do have a list of prepared questions to  
7 ask you.

8 So, you did touch on this a little bit in your  
9 presentation, but can you elaborate on how new  
10 developments in the nuclear energy industry and within  
11 the federal government are increasing the urgency of  
12 finding solutions for spent fuel?

13 ROD BALTZER: We've already got 90,000 metric  
14 tons.

15 We're producing more every day.

16 And now we're talking about doubling or tripling  
17 nuclear power by 2050, meeting some of the AI demands  
18 and and other things.

19 It's just going to increase the rate of that.

20 We've also added a little more complication.

21 So it all used to be light water reactor fuel.

22 So you would have, you know, pressurized water  
23 or boiling water reactors, but now you've got new  
24 advanced fuel types.

25 So TRISO pebbles or graphite matrix, molten

1 salt, vitrified waste out of reprocessing.

2 Those weren't supposed to be very large, if at  
3 all in the kind of national repository.

4 And now you got to think about all those and how  
5 do you handle that and, and what do they do to your  
6 program.

7 And so there is a lot of things that we need to  
8 do now.

9 What what I caution people is it's really  
10 beneficial if you spend just a little bit of time up  
11 front thinking about the back end.

12 So what are you going to do with the waste?

13 And so if you're building your reactor, make  
14 sure it's compatible with the universal canister system  
15 so that it can be stored, transported through the mine  
16 repository or borehole repository without repackaging  
17 it.

18 Repackaging in the U.S. for the dry cast we have  
19 would be about \$20 billion if we can think upfront and  
20 not have to spend the cost or the radiation dose to  
21 workers or other things.

22 You know, that's important to just think about  
23 now instead of 20 years from now.

24 JESSICA LUTERNAUER: All right, so with respect  
25 to a single purpose entity to manage the spent fuel

1 program, why do you believe that is so critical to  
2 success?

3 ROD BALTZER: What we've seen is that without  
4 having that be just the sole focus of an entity, it  
5 it's really difficult.

6 With DOE, the administration changes and there's  
7 a focus on different priorities.

8 And so it can get pushed aside and kind of  
9 forgotten about or it can change in, in the direction  
10 it's going.

11 And, and having that longer-term ability to  
12 plan, to create those relationships and trust, which,  
13 which take time to develop, and be consistent through  
14 that and, and kind of fulfill your promises is, is the  
15 word I'll, I'll use, I guess the phrase I'll use, I  
16 think that's the the key piece of that independent  
17 agency.

18 You know, you, you want them to be less  
19 sensitive to the political swings we have in this  
20 country and, and more just focused on getting the job  
21 done.

22 JESSICA LUTERNAUER: Wonderful.

23 And you talked about public private  
24 partnerships.

25 Can you elaborate on how you would envision

1 those partnerships might work and how they would help  
2 advance the U.S. program?

3           ROD BALTZER: You know, there's, there's always  
4 going to be a lot of public interest in spent fuel  
5 disposal.

6           It's a, it's a hot topic, pun intended and I, I  
7 think, you know, there, there, there's always going to  
8 have to be that relationship and, and, and trust out  
9 there.

10           There's, there's a lot of opportunities with  
11 private companies who've got technology and  
12 advancements.

13           They can move much faster than some of the  
14 government entities.

15           But there's, there's always that public  
16 oversight.

17           You want to have the right regulatory oversight.

18           You want to make sure that safety is being paid  
19 attention to and there's no shortcuts taken.

20           So you, you need that mix of them.

21           And I think, you know, I've, I've seen that work  
22 in the past in other aspects and, and it really is a,  
23 a, a powerful way to, to move forward.

24           JESSICA LUTERNAUER: All right, so to dive a  
25 little deeper on technologies, the USNIC paper suggests

1 developing different technologies like the deep  
2 borehole disposal and reprocessing.

3 And you did talk about those a little bit, but  
4 can you expand on how those technologies work and how  
5 they might benefit both taxpayers and host communities?

6 ROD BALTZER: Reprocessing facilities are a lot  
7 larger.

8 You may have seen in the news that Orano  
9 announced they were going to build a \$1.7 billion  
10 reprocessing facility in Oak Ridge, Tennessee.

11 And so that's a really large construction  
12 project and, and is going to create a lot of jobs.

13 There's a lot of jobs and, and economics that go  
14 into reprocessing during operations as well.

15 The La Hague site in France has been doing this  
16 for years and years and, and they've got a a steady  
17 workforce and, and you know, a lot of economic  
18 development through that community and that entity.

19 One of the things that's interesting is as the  
20 waste goes through that reprocessing facility, you do  
21 shrink the volumes and so you could collocate a disposal  
22 facility with that.

23 So for a borehole disposal, that is something  
24 that could be modular and, and collocated with it.

25 But for boreholes, it's not a huge labor force.

1           You, you, you know, would have less than 100  
2 people involved in that that process.

3           But for a recycling facility, you might have  
4 1000 people involved in that process.

5           And so being able to kind of join up where you  
6 don't have the waste stored on site or stored above  
7 ground on site, but have a disposal solution, but  
8 you're having some of the economic impacts from  
9 recycling, but you've got that kind of permanent  
10 solution with a borehole is how some of that could team  
11 up together and work cooperatively.

12           JESSICA LUTERNAUER: Thank you.

13           So you talked about the specific changes that  
14 would be needed to the Nuclear Waste Policy Act.

15           What immediate actions could be taken under the  
16 existing law without those amendments?

17           ROD BALTZER: You could you could start a lot of  
18 things kind of short of a second site.

19           And so that's the technology demonstration,  
20 getting some of the regulations updated.

21           So we've got part 60 of of 10 CFR, part 60 under  
22 the Nuclear Regulatory Commission talks about generic  
23 standards for a high-level waste repository but it's  
24 really based on kind of an outdated methodology.

25           It's a checklist of if you meet these hundred

1 items, then you can get a license.

2 The more updated is a probabilistic performance  
3 assessment of how this works over the long term and  
4 provides a dose to an intruder.

5 And so, you know, updating those to be more  
6 current and technology neutral so it's not specific to  
7 a mined repository or a particular location, I think  
8 would go a long way and we could get some of that  
9 thing, some of those things done as well as the the  
10 testing, the demonstration of those technologies and  
11 just people started in the discussion because those do  
12 take a while.

13 JESSICA LUTERNAUER: Right.

14 So the the road map for action in the policy  
15 paper talks a lot about the importance of trust in a  
16 collaboration-based process.

17 What do you think are the biggest challenges to  
18 building trust and how do you think we could overcome  
19 them?

20 ROD BALTZER: A lot of times I think we, we, we  
21 have a government entity that comes in, signs a  
22 contract, says they're going to do something and they  
23 don't quite follow through on that.

24 There's a different result, you know, things  
25 change and, and they've got a different priority or

1 they've been told to do things differently and that  
2 just really disrupts trust.

3 I, I think there are ways where you can, you  
4 know, have a, have a more independent entity that can  
5 keep those commitments.

6 As you continue to keep those commitments and  
7 follow through on your promises, it does deepen that  
8 trust relationship and there will need to be a deep  
9 trust relationship to, to dispose of spent fuel in a  
10 location somewhere.

11 So I think that's the, you know, intent is  
12 really get somebody who can think a little longer term.

13 They're not trying to get something done in the  
14 next 4 years.

15 They're trying to get something done permanently  
16 and and just work through that process.

17 JESSICA LUTERNAUER: Well, so one of the things  
18 that Spent Fuel Solutions advocates for is having an  
19 active repository program as a critical piece to  
20 providing communities that would be hosting  
21 consolidated storage facilities with assurance that  
22 they're not going to become permanent disposal sites.

23 How do you envision integrating storage and  
24 disposal planning to minimize the risk of stranded  
25 spent fuel?

1           ROD BALTZER: We saw a couple of commercial  
2 entities try to put a consolidated interim storage site  
3 together.

4           They they went through some legal challenges and  
5 other things.

6           But it was interesting that both states in Texas  
7 and New Mexico raised the issue of, well, how long is  
8 it going to be here?

9           What's the final solution for this?

10          And there really wasn't a good answer.

11          We don't have a policy in the U.S.

12          There's really no progress being made.

13          And so you know, fair point that, you know, it's  
14 hard to do consolidated interim storage if you don't  
15 have a disposal program.

16          So you know, if I think they go hand in hand,  
17 you're, you're really not going to have a consolidated  
18 interim storage program until you can have some  
19 assurances that it won't be there forever or that it's  
20 going to be disposed in that general area or, or, or  
21 something else.

22          So I, I think you do have to have kind of both  
23 those conversations at the same time.

24          And it's, it's one where you know, they're,  
25 they're challenging conversations.

1           They take a long time, but but there's  
2 definitely some economic benefits out of all that as  
3 well.

4           JESSICA LUTERNAUER: So you talked about your  
5 phased approach taking zero to seven years.

6           Can you dive a little deeper and provide some  
7 more information about what would be completed during  
8 each phase and what a realistic timeline would be for  
9 constructing both storage and disposal?

10          ROD BALTZER: Yeah, the, the, you know, immediate  
11 items are some of the entity, you know, put up a, a  
12 separate entity that can, can start some of this work  
13 immediately.

14          The demonstrations can happen very near-term as  
15 well.

16          Those are kind of scheduled and already planned  
17 out.

18          So some of those could kick off, you know,  
19 rapidly at the, the longer term is the actual  
20 implementation of that.

21          When you look at mined repository programs, they  
22 typically take longer than for example, a borehole  
23 program might.

24          Part of that, you know, both of them have siting  
25 and licensing, but part of that is just the

1 construction of the mined repository.

2           You, you generally have to kind of construct  
3 most of the mined repository before you can start  
4 operations and that may be a 10-year process.

5           We, we see Finland there, they should open up  
6 their mined repository next year.

7           But they've, you know, started that program I  
8 think in 1995 as I understand it.

9           So it's, it's taking them a very long time to  
10 get there.

11           And 10 years of that has been kind of  
12 construction of the mine.

13           With a borehole, you know, we can drill a  
14 borehole in about 60 days.

15           And so it's a quicker construction process and  
16 it's modular so you don't have to build the whole thing  
17 out at one time.

18           So there are some things we can do that would  
19 show, I'll call it baby steps.

20           You're obviously going to need more than one  
21 borehole to dispose and spend fuel in the U.S., but at  
22 least you could start some baby steps and get some  
23 confidence in the program, I think.

24           And, and that will really help discussions and,  
25 and with other communities that may be interested as

1 well as you go through.

2 JESSICA LUTERNAUER: Well, thank you so much.

3 Those are all of the questions that we have  
4 prepared.

5 But like I said, we've gotten quite a few in  
6 advance and I know there are some submitted already in  
7 the chat, so we will get started on those.

8 Right now, the first question is the U.S. has  
9 tried to solve these problems for more than 80 years.

10 Dozens of books have been published with  
11 proposed solutions.

12 So what's new here in the policy paper?

13 ROD BALTZER: I don't know that there is a ton  
14 that's new here in the policy paper.

15 It's one more of action than than than, you  
16 know, things that have not been done or these are brand  
17 new and nobody had ever thought of this before.

18 I mean, I'll give you an example and and I  
19 should probably put my Deep Isolation hat on for this  
20 one.

21 But for boreholes, I mean, this, this was  
22 thought about back in the 1950's, the American, sorry  
23 they that they had some studies even in the 80s that  
24 talked about boreholes and they decided the technology  
25 just wasn't ripe, that it was just going to be too

1 complicated.

2           So they just went to a mined repository, never  
3 looked back.

4           But meanwhile, the oil and gas industry  
5 developed directional drilling and it really opened up  
6 a lot of other opportunities.

7           For boreholes we don't frack, we don't break the  
8 rock, but we do use directional drilling and and that  
9 really opens up possibilities.

10           And so, you know, we rethought that at Deep  
11 Isolation in 2016 and that kind of brought it back.

12           It's not a new idea, but it got enhanced by some  
13 of the new technology.

14           And I think this paper is more about bringing  
15 these ideas that have been circulated and just trying  
16 to get action behind those and and make some progress  
17 because it hasn't been kind of done this way exactly  
18 before.

19           JESSICA LUTERNAUER. Well, you may want to keep  
20 on your Deep Isolation hat.

21           What legislative changes would be required if  
22 you were to allow states to borehole dispose of the  
23 waste that's being stored at existing sites?

24           ROD BALTZER: And so the Nuclear Waste Policy Act  
25 basically says you can only dispose at Yucca Mountain,

1 Nevada.

2 And so that would need to be updated to allow  
3 you to go for second sites.

4 You know, if it's also interesting, you know,  
5 right now DOE is the only one that can get a license.

6 So we would expect, you know, if DOE wanted to  
7 use boreholes, they certainly could.

8 We could be a vendor to them as they implemented  
9 this.

10 If you had an independent agency, you know, same  
11 kind of situation there.

12 You can also see the amended standard contract  
13 puts the new utilities, the new advanced reactors, on  
14 the hook for storage.

15 So instead of taxpayers paying that, that  
16 utility may be on the hook for up to 70 years worth of  
17 storage, 60 years of operations plus 10 years.

18 And so they may want to kind of take some of  
19 that liability in their own hands.

20 There's no way to really do that in our  
21 regulatory framework right now in the U.S.

22 So having some changes to that to open up that  
23 you'd have to make sure you had long-term liability,  
24 perpetual care, most likely through DOE or or a  
25 government entity that that had that kind of long-term

1 horizon.

2 But but there's some interesting things that  
3 have come up recently that that may may be more akin to  
4 that.

5 JESSICA LUTERNAUER: If the United States  
6 develops the capacity to safely manage spent fuel,  
7 could this prompt the advancement of new nuclear power  
8 facilities?

9 So you had talked briefly about that, but you  
10 know, are there any more specifics?

11 ROD BALTZER: I, I, I think they go hand in hand.

12 So when you, when you look at new nuclear and  
13 adding that in, you need to make sure you're talking  
14 about the back end.

15 One of the things that the nuclear industry does  
16 get is that, you know, what are you going to do about  
17 the waste?

18 That always comes up and so, you know, it's a, a  
19 dampener, I guess not having a solution we can talk  
20 about, well, it's not very much waste.

21 It's, it's very small volume.

22 If you took a Coca-Cola can, that's the amount  
23 of uranium you would use for a lifetime of electricity  
24 using nuclear power.

25 So it's a small amount of waste, but you know,

1 you, still it's stored safely.

2 You know, it's it, it's transported safely.

3 But we really need that kind of final disposal  
4 piece to I think fully check the box on that.

5 JESSICA LUTERNAUER: All right, thank you.

6 What lessons learned can you summarize from the  
7 environmental liabilities created at reprocessing  
8 facilities that used PUREX technology?

9 So West Valley, Hanford, Savannah, Riverside and  
10 Idaho National Lab.

11 ROD BALTZER: It is amazing how much I think  
12 we've learned in the nuclear industry on what not to do  
13 through some of the past activities that have been done  
14 at those sites.

15 You know, those, those sites, you know, some of  
16 that was reprocessing and, and there's also, you know,  
17 Hanford obviously involved in the original Manhattan  
18 Project and, and a lot of activities there.

19 And, and you see some of the pictures from, you  
20 know, the, the 1950s and, and waste handling and, and  
21 what happened.

22 I think we've learned a lot on how to package,  
23 how to be more conscientious with how you store it.

24 You know, Hanford, their liquid waste, a lot of  
25 it was in single shell tanks that would never fly

1 today.

2 It's it's being moved into double shell tanks.

3 And and even then there's a lot of things you  
4 can do to kind of remediate or, or do things  
5 differently than they did.

6 So I think we've learned lessons and part of  
7 that's based on having to learn them the hard way  
8 through mistakes in the past.

9 But, but I think there's a lot of lessons that  
10 we have learned that absolutely need to be implemented  
11 into new reprocessing and recycling activities.

12 JESSICA LUTERNAUER: All right, so I'm going to  
13 read this next question.

14 It is a little long.

15 So Senate Bill 86 is spearheading California  
16 support for advanced manufacturing and fusion.

17 We need a new national lab at San Onofre and a  
18 new fusion reactor called DEMO.

19 From schematics developed by international  
20 collaboration, we can produce cheap, reliable, space  
21 efficient and limitless electricity with the new  
22 PID/LQR hall effect sensor, magnetic pixelated plasma  
23 shaping, and turbulent transport mitigation.

24 The Army, Navy, and Air Force all want SMRs for  
25 bases and ships, new fusion technology, and better

1 power production.

2 Why is there so much traction and friction for a  
3 fusion plant and what is the psychology of its  
4 contrarian nature?

5 ROD BALTZER: I think you gave me a multiple  
6 choice.

7 I'm going to say A.

8 No, so I am not a fusion expert.

9 I'll, I'll put that on the table.

10 As I understand it, you know, fusion generally  
11 is not going to produce near as much waste there.

12 There could be some from the targets and things,  
13 but generally wouldn't produce as much.

14 And and there's been some thoughts that it could  
15 even use some of the spent fuel or other things as a  
16 kind of a starter for for the fusion reactors.

17 I think the, the thing I hear the most, I guess  
18 rod bolts are not not representing USNIC, right now,  
19 but is that, you know, fusion will be great.

20 When is it going to come on?

21 And it's been, you know, it'll be here about 10  
22 years for the last 20 years.

23 And, and so it's just when will it come on?

24 There's been a lot of advancement and, and, you  
25 know, we'll see if that can get sized and scaled and

1 what not if it goes.

2           Meanwhile, we, we need to have, you know, power  
3 sources that we've got now and I think fill in gaps  
4 until that's on and, and ready to go.

5           So I think fission is one of those and you know,  
6 I'm a believer in kind of all the above.

7           So if you've got a wind, solar, you know,  
8 fossil, nuclear, whatever works for your country and  
9 provides stability to that grid and provides those  
10 needs.

11           But we do need to think about the back end and  
12 and the waste as we go through those.

13           JESSICA LUTERNAUER: All right.

14           Thank you.

15           Do you think it would be helpful if the U.S.  
16 followed Europe's lead and required each state to  
17 dispose of its own waste?

18           ROD BALTZER: So you're, internationally, each  
19 country's got to take care of its own waste.

20           And so when we look at the E.U., each, each  
21 country's got to take care of their waste.

22           The International Atomic Energy Agency does  
23 have safety standards and guidelines out for how to do  
24 that and, and disposal, but each country would then  
25 implement it and they may add additional requirements

1 into their regulatory scheme.

2 So if we go and we look at another country's  
3 disposal potential, we can do a regulatory gap analysis  
4 of, you know, if were they just looking at my  
5 repository, should they look at boreholes and, and what  
6 does that look like?

7 When we go back to the states, you know, the,  
8 the U.S. is, is just that, you know, one country.

9 And, and for low-level radioactive waste, we  
10 actually had the states split into compacts.

11 And so California's part of the southwest  
12 compact and California was supposed to be the host of  
13 the low-level radioactive waste site.

14 It never happened.

15 It was supposed to be Ward Valley and it, it  
16 got cancelled after some studies and things, but they  
17 are now exporting some of that waste to other compacts  
18 who have decided to import that for a fee.

19 And so I, I think there is the potential where,  
20 you know, states could decide they'd like to host and  
21 they'd like to charge fees to other states if they  
22 believe that's safe and something that is good for  
23 their community and state.

24 And there may be states who decide they'd  
25 rather pay the extra fees and, and whatnot than try to

1 host it themselves.

2           Some have more land or more availability, more,  
3 you know, appropriate geology than others.

4           So I think that's a, you know, state by state  
5 decision.

6           But I do think there's an opportunity for the  
7 states to work together.

8           They formed the compacts to make sure they  
9 didn't have to take everybody's waste and they could  
10 keep others out and, and kind of create their own  
11 barriers to to not be the nation's dumping ground, but  
12 have the benefits of a disposal solution that they  
13 could share or not share depending on what they kind of  
14 felt like doing through that compact system.

15           JESSICA LUTERNAUER: All right, the amount of  
16 waste is not small.

17           As you talked about, nationally, there are now  
18 about 100,000 tons of high-level nuclear waste with no  
19 solution on how or where to store it safely.

20           Some of these isotopes will remain lethal for  
21 millions of years.

22           It takes 10 half-lives for it to be mostly  
23 gone.

24           Why create more waste when we can't deal with  
25 what we already have?

1           ROD BALTZER: Yeah, I I think you could almost  
2 say that with all of the solutions we've got.

3           So when you look at coal, there's a lot of fly  
4 ash and it's stored in, you know, containment ponds  
5 and, and other things.

6           You know, as you look at solar and, and wind,  
7 as you start to have to, you know, tear those down and  
8 replace those as they age out, there's a lot of, you  
9 know, trash that comes out of that as you go through  
10 it.

11           Nuclear power plants, same thing.

12           You've got to decommission those and then  
13 you've got all this spent nuclear fuel stored around.

14           So I think we we do have waste problems as we  
15 go forward.

16           When we look at, you know, the technologies and  
17 trying to do, you know, the, the cleanest power we've  
18 got that's consistent in base load.

19           I think there are a lot of benefits for nuclear  
20 power if it is provide those, it's got a pretty minimum  
21 waste for them.

22           But you're right that, you know, we do need to  
23 have a disposal solution.

24           And I think your your comment kind of keys on  
25 that there is opposition until you find a disposal

1 solution.

2           So you know, that should be high on the  
3 priority list and one of the reasons this should be a a  
4 priority, you know, for the country and, and getting  
5 that done.

6           There's it, it's one of those, I've also seen  
7 that the younger generation is a little bit more open,  
8 I think to nuclear power.

9           They haven't had the kind of stigma in history  
10 with World War 2 and, and dropping of the atomic bombs  
11 and some of the Cold War scares and, and, and, and  
12 things that came through that.

13           And so there's a little bit more openness  
14 there, but it's also, I think they're, you know, tired  
15 that they've got all this waste and legacy that got  
16 handed to them and nobody's done anything about it.

17           And, and it's time to kind of stop kicking the  
18 can down the road and taking it to the next generation  
19 and and figure it out before you hand it off to your  
20 grandkids.

21           JESSICA LUTERNAUER: All right, thank you.

22           We have some comments with concerns about  
23 reprocessing that maybe you can address.

24           So they say reprocessing still takes a safe  
25 solid oxide spent nuclear fuel and creates acidic

1 raffinate liquid that is extraordinarily difficult and  
2 more expensive to manage.

3 And then it it would create dangerous and  
4 expensive waste problems, no mention to create  
5 proliferation problems from global commerce.

6 Can you, do you address any of the concerns  
7 about reprocessing?

8 ROD BALTZER: So I'll say again, I'm not a  
9 reprocessing expert either.

10 As I understand it, some of the technologies  
11 have improved and, and some of them are they're all  
12 considering, you know, how to not, you know, produce  
13 plutonium and, and, and be proliferation.

14 Yeah, aspects, but I, I, I don't know enough  
15 about the technology to, you know, really, really talk  
16 intelligently on the subject.

17 So apologize for that.

18 JESSICA LUTERNAUER: No problem.

19 Thank you.

20 How does one convince advanced reactor and  
21 recycling companies to work with us on resolution of  
22 the waste issue?

23 ROD BALTZER: I, I think we're inviting, I, I  
24 appreciate Spent Fuel Solutions.

25 I think you guys are doing a good job of trying

1 to bring both industry and the communities and, and  
2 interested parties together.

3 And so I think working together, trying to get  
4 some of these actions done, I, I think is a good way to  
5 start.

6 I, I like the idea of kind of a grassroots and  
7 reaching out and making sure that Congress understands  
8 there, there is a problem here.

9 We need some action on it and hopefully having  
10 a, you know, our intent for the Back-End Working Group  
11 at USNIC was have a plan so that we can kind of form  
12 around that and and see if we can make forward  
13 momentum.

14 If more of us are singing kind of the same song  
15 or at least similar tunes, maybe, maybe we can make a  
16 little progress.

17 I've, I've seen there's some other entities out  
18 there as well, the Nuclear Energy Institute, American  
19 Nuclear Society, the Nuclear Waste Strategy Coalition,  
20 the Energy Community Alliance, that have signed on to,  
21 I'll call it similar kind of frameworks about  
22 independent entities and, and making progress.

23 So I'm encouraged that it's not just USNIC,  
24 it's not just Spent Fuel Solutions, it's, it's other  
25 entities and, and, and some of that's starting to go in

1 a similar direction.

2 So maybe there's an opportunity to, to get  
3 that momentum we need to get over this hill.

4 JESSICA LUTERNAUER: So going back to deep  
5 boreholes for a moment, with some public sentiment  
6 being pro-nuclear but anti-waste, do you see boreholes  
7 as a solution that could potentially align with all new  
8 nuclear projects?

9 ROD BALTZER: All's probably too broad.

10 I mean, there are some things that will require  
11 a mined repository.

12 They're they're too big to fit it in a  
13 borehole, but but a lot of the new nuclear is smaller.

14 You look at TRISO balls or, you know, petrified  
15 waste out of a reprocessing facility, molten salt, and  
16 and those may be interesting to put down boreholes.

17 And so collocating with some of those are I  
18 think helps reduce transportation, then provides a  
19 specific solution.

20 What we have found at Deep Isolation, my Deep  
21 Isolation hat on, is that the deeper we know, the  
22 better the geology gets.

23 And so when we generally are going a mile deep,  
24 we think that's about twice as deep as a typical mined  
25 repository.

1           And, and and it gets better if you go a little  
2 deeper than that.

3           It costs more, but it's, it's something that  
4 you know, each site would need to be evaluated for.

5           But we do think is a, a potential solution.

6           JESSICA LUTERNAUER: And what challenges do you  
7 see in securing required permitting approvals and  
8 public acquiescence for individual waste disposal  
9 boreholes?

10          ROD BALTZER: Yeah, I, I, I think anytime you  
11 talk about waste, there's going to be challenges.

12          And, and so, you know, you'll, you'll never get  
13 100%, you know, everybody's in favor of something.

14          And, and so I think it's the discussion with  
15 the community at large and, and the, the state, the,  
16 the, the federal agencies and, and having the, the best  
17 solution you can come to that's got, you know, I'll  
18 call it majority agreement or whatever that looks like  
19 for your community or, or your entity.

20          And, and so it, I, I think just starts with the  
21 discussion at that point and, and see where, where it  
22 goes and, and how it can fit the needs.

23          One, one of the things that's interesting is  
24 you, you can, you know, if you're thinking about this  
25 enough in advance, you can craft this solution to fit

1 whatever your needs are.

2 And so if you needed to be deeper or away from  
3 a certain area or contemplate certain benefits for the  
4 community or other things, that can all be kind of  
5 worked into the puzzle, as long as we know that kind of  
6 upfront.

7 If you're trying to add that in at the very  
8 end, it gets really, really challenging.

9 So being able to work upfront and cooperatively  
10 through that I think is a real key.

11 JESSICA LUTERNAUER: And in your opinion, should  
12 traditional utilities be rethinking their previous  
13 methods for building power plants?

14 It appears there is quite a bit of room to  
15 better integrate nuclear holistically, such as building  
16 sites where the fuel can move from an LWR to a breeder,  
17 then to a recycling option, all while using the excess  
18 steam, medical isotopes, etcetera.

19 This is even before accounting for data  
20 centers.

21 ROD BALTZER: I think there are opportunities.

22 You know, we, we, you know, a lot of these  
23 nuclear plants are, I'll say out in the country kind of  
24 on their own.

25 And, and so they're maybe not near industrial

1 plants that would need the steam for things, but, but  
2 others are closer as we've started looking at  
3 reprocessing and enrichment and breeder reactors and  
4 other things.

5           It is interesting to kind of put those all in a  
6 similar area that could really enhance jobs and  
7 economic benefits, property taxes, but you know, again  
8 making sure that you've got that kind of full cycle  
9 accounted for with the back end as well and and include  
10 that all in there.

11           So I think there are different ways to think  
12 about this now and and the connections with the grid  
13 and other things which which make it more interesting.

14           JESSICA LUTERNAUER: All right.

15           Well, thank you so much.

16           We have a little bit more time if we have any  
17 additional questions, but I think that's everything.

18           So let's see.

19           I think we have one more.

20           All right, that was more of a comment.

21           All right.

22           Well, thank you so much for participating.

23           We really appreciate it and have definitely  
24 learned a lot.

25           I would encourage everybody to visit USNIC's

1 website and take a look at the policy paper if you  
2 haven't already.

3 And then of course, as always, please visit our  
4 website [spentfuelsolutionsnow.com](http://spentfuelsolutionsnow.com) where you can join  
5 the coalition.

6 We'll have a video of today's webinar posted by  
7 the end of the week and look forward to seeing you  
8 during our next event.

9 We have one more question actually.

10 Can you elaborate on the intended function of  
11 the Independent Waste Management Agency?

12 ROD BALTZER: The intended function is to  
13 basically take over the role that DOE has right now and  
14 and be responsible for the disposal solution in the  
15 U.S.

16 So that agency would site, license, operate and  
17 then have legacy waste management ownership over that  
18 disposal facility.

19 We think that independent entity would be  
20 outside of the kind of annual budget process.

21 So they would have access to the nuclear waste  
22 fund or interest off of that fund to get started with  
23 technology demonstrations and, and potential, you know,  
24 siting discussions and then access to the corpus of  
25 that fund as they start the actual construction of the

1 facility and then operations of it.

2 But the, the independent agency would be the  
3 the workforce for the disposal solution.

4 JESSICA LUTERNAUER: All right, well, thank you  
5 so much again.

6 I really appreciate you participating.

7 We really appreciate everyone in attendance  
8 today and look forward to seeing you next time.

9 ROD BALTZER: Thanks for having me on.

10 JESSICA LUTERNAUER: Thank you.

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25