Private ISF

From: Rod Baltzer <rbaltzer@valhi.net>
Sent: Friday, January 27, 2017 9:00 AM
To: PrivateISF
Cc: Jeffery Isakson - Areva Inc. (jeffery.isakson@areva.com); Kent Cole (kcole@nacintl.com); Michael Ford
Subject: Response to RFI on Private Initiatives to Develop Consolidated SNF Storage Facilities
Attachments: WCS Team RFI Response 2017 0127.pdf

Please see the attached WCS team response to the DOE's RFI. The response includes a cover letter and a detailed response. We also request the opportunity to make a presentation to DOE to discuss our response to this RFI. Please contact me if you have any questions.

Thanks,
Rod

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AMERICA'S NUCLEAR SOLUTION

TN Americas

NAC INTERNATIONAL

January 27, 2017

To Whom It May Concern
Via email at: PrivateISF@hq.doe.gov

Subject: Response to RFI on Private Initiatives to Develop Consolidated SNF Storage Facilities

Dear Sir/Madam:

Waste Control Specialists LLC (WCS) appreciates the opportunity to respond to the U.S. Department of Energy (DOE) Office of Nuclear Energy (NE) request for information (RFI) of October 27, 2016 involving private initiatives (PIs) for consolidated interim storage facility (ISF) services for spent nuclear fuel (SNF) from commercial nuclear power plants (NPPs).

WCS has teamed with TN Americas LLC (TN) and NAC International Inc. (NAC) as a PI to license an ISF, and ultimately to build and operate an ISF at our facility in Andrews County Texas under a contract with DOE. Such a solution would provide a way to safely consolidate the SNF created around the country at one location, delivering security and cost efficiencies and accelerating the development and demonstration of supporting SNF transportation infrastructure. As such, we are providing this consolidated RFI response for our team from the perspective of a prospective ISF owner and operator.

WCS is licensing a SNF ISF that will be implemented in phases. Phase 1 is designed to provide safe, secure and efficient storage of spent nuclear fuel from permanently shutdown nuclear power plants, where all of the spent fuel has been or is soon to be transferred from the pool to on-site dry storage. We believe the Phase 1 scope is consistent with the priorities of the nuclear industry and is aligned with the scope and mission of a Pilot ISF for shutdown plants capable of providing federal management capabilities by 2021, and well in advance of the long term repository. The license application covers storage of up to 40,000 MTHM through expansion in subsequent phases. Phased expansion within this license limit would be done in consultation with the DOE, the State of Texas, and the local communities. These phased expansions could include accepting canisters from other suppliers through an amendment of the license. Other capabilities as needed such as research and repackaging could be added to the facility license with the consent of the DOE, the State of Texas, and the local communities.

The WCS property in Andrews County, Texas is an excellent candidate for siting a consolidated ISF. The site already hosts existing rail transportation facilities, nuclear waste processing and disposal facilities, including federal facilities that will be owned by DOE at the end of their operations. Many of the same geographic, geologic, weather and socioeconomic factors that led to State and community support for these existing facilities would also apply to

an ISF. Additionally, the existing community support, site infrastructure and skilled workforce provide an excellent platform for an efficient facility expansion with relatively low risk compared to a new undeveloped or unused site.

The WCS team's decision to pursue the licensing of an ISF is built on the urgent national need for DOE to meet its contractual obligations to take title to SNF and remove it from nuclear power plant sites The development of this ISF capability and the associated transportation infrastructure complements the national geologic repository program and offers flexibility and execution experience directly benefiting the entire waste management system. WCS saw an opportunity to assemble an "outside the beltway" PI that could significantly shorten the timeline needed for DOE to begin solving the challenge of stranded SNF at shut down sites and utilities across the country. Thus, using exclusively its own funds, the WCS team developed and submitted a license application to the U.S. Nuclear Regulatory Commission (NRC) for review on 28 April 2016, and the NRC review is underway.

In accordance with the DOE Request for Information published in October of 2016, the WCS Team is in a position to provide a privately developed ISF that could serve as both a pilot and a larger, consolidated ISF that would serve DOE's integrated waste management approach well. Our PI-ISF is well positioned to help DOE meet its strategic goals for integrated waste management published in January of 2013. An ISF, if promptly licensed constructed and operated, could save the DOE and U.S. Government billions of dollars in expenses over the status quo. This dramatic savings could be realized with our PI-ISF because of progress to date on licensing with the NRC, establishing a well characterized site with ongoing nuclear waste management operations, and developing consent through close coordination with local community and statewide stakeholders.

Our attached response to the DOE RFI:

1. Highlights the substantial benefit in having an ISF(s) as part of DOE's integrated waste management program. An ISF is both complementary and beneficial to the repository program and should proceed in parallel with any repository development efforts.
2. Demonstrates that a PI offers significant advantages including stronger incentives to maintain cost and schedule efficiencies over a government-developed and -operated ISF.
3. Demonstrates that any potential disadvantages of a private ISF can be readily mitigated.
4. Highlights the existing, strong community and stakeholder support for the ongoing PI at the WCS site, which reduces the risks for the project.
5. Recommends DOE proceed promptly to conduct a fair and open competition for siting and developing an ISF(s). Time is of the essence.
6. Provides our team's response to the specific questions posed in the DOE RFI.

Consistent with the process outlined in the RFI, we also request the opportunity to make a presentation to DOE to discuss our response to this RFI.

Best regards,

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Jeffery
2017.01.25
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Rodney Baltzer	Jeffery Isakson	Kent Cole
President and CEO	VP Business Operations	President and CEO
Waste Control Specialists LLC	TN Americas LLC	NAC International, Inc.

Waste Control Specialists (WCS) Response to

DOE Request for Information on Private Initiatives (PI) to Develop Consolidated Interim Storage Facilities (ISF)

AMERICA'S NUCLEAR SOLUTION

January 27, 2017

The following document provides a response to the DOE RFI regarding private initiatives for developing

consolidated interim storage facilities for spent nuclear fuel.

The Benefits of an ISF

The benefits of an ISF make it an essential part of any integrated, efficient, phased and adaptive waste management program. Private ISF initiatives offer distinct advantages over government developed facilities and any potential drawbacks to private solutions have direct parallels with government solutions. Those drawbacks have very similar mitigations for both private and federal implementations. Those mitigations need to be in place for either approach and do not detract more or less from either a private, or federal approach. One of the most significant advantages of the private ISF initiatives is the opportunity to significantly accelerate the deployment schedule saving significant time and expense that is required to site, license, construct, and start up a federal facility. By proceeding promptly to award a contract for a pilot ISF to a qualified team/site, the DOE can accelerate solving the challenge of removing SNF from shutdown, as well as operating sites. Additional considerations, including complementary benefits, advantages of private initiatives, and open transparent competition, are described below.

Complementary Benefits

An ISF is both complementary and beneficial to the U.S. repository program. In fact, it is an essential element of a phased and adaptive integrated waste management program because it:

- Allows DOE to expedite meeting its obligations to take title to and remove fuel from shutdown and operating reactor sites (thus eliminating the liability for future payments to these reactor owners from the Judgement Fund) while the process of licensing, constructing, and opening a repository proceeds.
- Provides a near-term option for SNF management that delivers management and cost efficiencies while a long term solution (geologic repository) continues to be developed.
- Provides a “surge capacity” within the U.S. SNF management system.
- Provides valuable options and flexibility in the waste management program, for instance permitting repackaging of waste for the repository to occur at the ISF instead of at utility or repository facilities. This avoids utility concerns over disrupting their operations and could simplify repository licensing, construction and operations.
- Develops the infrastructure and demonstrates safe, secure transportation operations on a smaller scale than is possible with full repository shipments. This includes the opportunity to implement provisions of Section 180(c) of the NWPA for the training of public safety officials for the transportation of SNF and HLW through their jurisdiction.
- Provides a transportation capability and a viable destination to address any potential issues at shutdown sites that could require relocation of stored SNF.
- Provides significant financial and security benefits available through consolidation of multiple “stranded” ISFSIs into one ISF.
- Allows for the more efficient application and monitoring of aging management programs and associated R&D.
- Enables release of the land associated with decommissioned reactor sites for unrestricted, more economic, and more beneficial use.

Summary – A Private Spent Fuel ISF Delivers Demonstrable Benefits to DOE

The economic benefit to the government (in reduced liabilities and cost for storage) for shutdown sites is clear and compelling.[1] Private ISF initiatives present a valuable opportunity to secure the infrastructure and capability that can begin stemming the growth of taxpayer liabilities. Those liabilities total $23.7 billion if DOE is able to begin accepting material within the next ten years - and will rise if the department's schedule is further delayed.

Advantages of a PI (in lieu of a Government-owned facility)

There are significant schedule and cost benefits to a PI over a government-owned facility. The DOE Draft Consent Based Siting Process published on 12 January, 2017 estimates it would take 5-11 years before licensing of a consent based, federal ISF could begin. A PI will significantly improve the schedule and save considerable cost as a result. Other advantages include:

- Private entities and interested communities have already teamed-up and are moving forward. PIs that are already active have a significant schedule and cost advantage over development of a government-owned ISF following completion of a consent-based siting process because:
    - Essential elements of consent are already in place at PI facilities;
    - Facility siting, design and licensing are already underway; and
    - Radiation safety, environmental monitoring, infrastructure, and radioactive waste operations may already be in place.
- Given that established PIs already have a presence in the community and have become an accepted part of the local community organizations and institutions, the DOE benefits from this existing strong community relationship and does not have to replicate the challenging work of establishing strong state/local/tribal trust and support for its SNF initiatives.
- PI is not subject to standard government capital and line-item budgeting that often adds years to a project timeline.

Open, Transparent Competition and Required Timeline

There is a potential for the NRC to grant a facility license as soon as 2019 given the fact that one PI has already submitted a license application and another PI is getting ready to submit its application. If the DOE were to choose the PI ISF option, design for ISF construction could begin prior to 2019 so there is no construction delay. Therefore, licensing and construction timelines can be optimized if the DOE is prepared to execute contracts with PIs as soon as possible.

The procurement of transportation casks, rolling stock and facility construction would also take approximately 3 years, allowing the DOE to meet its announced strategy of a pilot ISF in 2021. Any delay in DOE's contracting process will cause a day-for-day delay in PI ISF development and operation. We believe the following milestone timeline will allow DOE to enter into an agreement with a PI ISF to support a schedule for expedited development:

- Contract funding in 2018 Budget Request — March 2017
- RFP issued — October 2017

[1] https://curie.ornl.gov/system/files/centralized_interim_storage_of_snf.pdf

- Proposals due — January 2018
- Contract(s) awarded — April 2018
- Contract(s) executed — June 2018

Our Response to Your Questions

The following are DOE's questions ***(in blue italics)*** followed by our responses:

1. What key factors should be considered to ensure that PIs, as part of the overall integrated nuclear waste management system, would provide a workable solution for interim storage of spent nuclear fuel and high-level waste?

A workable solution requires any site to be technically, environmentally, and institutionally acceptable. In this context, PIs can improve the probability of a workable solution. Questions pertaining to the technical merit of a PI-ISF will be determined by the regulator. In this case that would be the Nuclear Regulatory Commission (NRC). Ultimate determination that a PI solution is viable from a cost/benefit perspective will be established during the contract proposal review process.

There are multiple factors that will assure a PI-ISF provides a workable solution. The first five factors (1-5) listed below are ones that are inherent in the PI approach. The last two factors (6-7) would benefit from consistent DOE, or legislative action to ensure a PI-ISF is not disadvantaged by policy direction.

1. A PI-ISF that is proposed to be co-located with an existing private radioactive waste management facility would indicate existing acceptance of this type of work by both the state, and affected units of local government. Issuance of permits, water rights, and rights-of-way for an existing facility suggests a high degree of confidence in obtaining permissions for a PI-ISF.
2. A PI-ISF that is co-located with an existing radioactive waste management facility would provide ready access to a trained workforce that is imbedded in the community. The presence of such a workforce reflects favorably on the community's support for this line of work. Any training provided by the hosts to prepare workers for relevant nuclear industry jobs (through universities, community colleges or other workforce training programs) would provide further evidence that a PI-ISF would be workable in the same community.
3. A PI-ISF that is proposed to be located in a state and local community that have already established an amenable compensation agreement for hosting a radioactive waste management operation is an important indicator that a workable solution for the PI-ISF is available.
4. Formal statements by the state and affected units of local government supporting a proposed PI-ISF would provide another clear indication that the PI offers a workable solution.
5. A PI-ISF proposal from a private entity that has already obtained a license for managing radioactive waste would be another prime indicator of workability.
6. Any new federal policies developed regarding incentives to provide interim storage should apply equally to federal and private ISF efforts. This includes federal R&D and educational offers. The

policy goal should be to avoid creating artificial advantages, or disadvantages, for either approach.

7. Workability would be enhanced by ensuring any federal adjustments to community compensation for delays in removing SNF for final disposition would apply equally to federal and PI-ISF operations.

2. How could a PI benefit:

a. The local community and state or Tribe in which an ISF is sited?

As experienced by DOE at its sites across the country, there are a number of benefits, both tangible and prospective, a DOE/PI partnership can offer a local community that are very similar to the DOE's experience at Government-Owned, Contractor-Operated (GOCO) facilities, including:

- Tax subsidies or property value protection programs;
- General economic development programs;
- Health care and monitoring programs;
- Public school assistance and higher education programs;
- Environmental improvements to address existing air, water or waste problems;
- Infrastructure improvements, including highways, railways, and other public systems; and
- Direct financial assistance.

Like federal government facilities, PI's can become, and in some cases have already become, fixtures within a community as employees are engrained in the local community for multiple generations. PI employees are proud of their work at a facility that serves the country, generates income for both the state and local tax base, and provides stability to community organizations and institutions. Furthermore, the local community develops an affinity and trust for the PI that translates to broad base support for the nuclear waste management facility and its mission just like the DOE enjoys at long-standing DOE facilities and national laboratories.

Specific to the WCS ISF, it is not located on Tribal land. It is, however, located in a community where WCS is already a household name. WCS takes great care to support the local community and the state in both its corporate philosophy and financially.

Additionally, WCS believes that a PI ISF would only strengthen the current relationship with the state and local community and expand future opportunities for other businesses in the area. WCS is already operating a facility licensed to manage radioactive materials, and is a known entity with a long history and ties to stakeholders. WCS anticipates the creation of an additional 60 of jobs during construction and operations for the ISF, which would put total employment at the facility at over 200 people.

b. Neighboring communities?

Currently our site employees live in neighboring communities on both sides of the Texas/New Mexico border and we would expect that to continue as operations at WCS grow. WCS currently

employees a management-level person who serves as the VP of Community Affairs and is tasked with creating and maintaining relationships in communities around the facility, including nearby communities in neighboring states. We support youth sporting events, the chamber of commerce, local governments and local clubs such as the Rotary Club in both Andrews, TX and Eunice, NM.

3. ***What type of involvement if any should the Department or other federal agency consider having with the PI and the community regarding organizational, structural, and contractual frameworks and why?***

Organizationally, WCS is already a member of a community, region, and state and is responsible for and has demonstrated its efficacy in building understanding of and support for its business plans, including an ISF. Hence, the DOE's involvement with the community is reinforced by existing stakeholder support for the WCS ISF. Furthermore, the Department, through contracting mechanisms with WCS, can provide the government's additional assurances to the community that the safety and security of the SNF stored at WCS will be maintained at the highest levels, while at the same time retain federal government title to the fuel, providing the community the ultimate backstop of financial indemnity, and incentivizing the use of local resources.

The primary federal organization involved in the licensing, construction, and operations of the WCS ISF is the NRC, who will be interacting with the community, region, and state on a frequent basis, beginning with the scoping phase of its EIS effort. The NRC will most likely also establish an appropriate role for its Agreement State partner, the Texas Commission on Environmental Quality (TCEQ). Texas has traditionally relied on TCEQ as its source of safety expertise and public oversight assurance for the WCS facility. We are confident that WCS and Texas will benefit from TCEQ's appropriate involvement in the ISF.

The overarching condition is that the Department need not and cannot adopt its traditional role to educate, familiarize, and gain consent when utilizing a PI, including WCS' ISF.

However, the DOE should avail itself of the opportunity to fund and support the Regional Transportation groups and 180(c) activities necessary to transport SNF and GTCC waste within the US. Contractual language that provides equitable relief to the PI ISF, state and local stakeholders if the federal government fails to meet the agreed SNF removal schedule should also be considered. The existence of such incentives will ensure that the ISF is, in fact, interim storage. Furthermore, our local community may benefit from having DOE sponsor a contingent of local elected officials and community leaders to tour existing spent fuel storage installations at nuclear power plants and interim storage facilities.

WCS has a long-term relationship with our local community. We are anxious to help facilitate the interactions between the DOE and our local community to demonstrate the strong engagement with and support we receive from our local community.

An extended duration contract allowing the recapture of licensing costs while also funding construction, receipt, storage operations, and a reasonable profit for WCS' ISF owners would be the first logical course of action should the DOE move forward with a PI ISF. Compensation mechanisms in the contract would need to include fees for the state and host community. Additional contractual considerations would be negotiated at the time of any such agreement. Funding not tied to the political considerations surrounding annual appropriations would be beneficial. H.R. 474 introduced during the 115th Congress is an example of such funding.

In order for the DOE to succeed in solving the SNF challenge ahead of a protracted, decade-long timeline, a procurement process should be initiated to allow the DOE to select the most qualified vendor/facility provider(s). Given the long lead issues of licensing and construction, it is critical that the DOE engage early to facilitate achievement of long term SNF management goals.

4. ***What are the benefits and drawbacks of a PI, compared to a federally-financed capital project resulting in a government-owned contractor-operated (GOCO) interim storage facility?***

PIs that provide centralized storage of spent nuclear fuel have an international record of success that encompass design, engineering, construction and operation of the ISF, as well as transportation, providing an excellent reference for the provision of similar services in the United States. It is also worth mentioning that all of the dry storage facilities at power plants in the US were designed, licensed, constructed and operated by the private sector.

As DOE pursues an integrated radioactive waste management system, PIs can offer many benefits. For PIs to be a responsible part of the solution there must be a clear understanding that the benefits and opportunities that the PIs offer are consistent with the overall DOE goals, and that the benefits outweigh the potential drawbacks.

The benefits that can be expected from the PIs include:

1. **Cost Savings** – At present, the government is making regular payments to settle litigation associated with its breach of contract over the disposition of spent fuel. Contracted payments to a PI operating an ISF will be substantially less than the total cost of this ongoing litigation and settlement. Private sector partners or PI's should be able to develop, construct and operate interim storage facilities at a lower cost than the government. And finally, operating costs of a larger facility will obtain efficiencies and economies of scale that are simply not attainable with the current model of managing SNF at individual utility sites.
2. **Time Savings** –At this time Waste Control Specialists (WCS) anticipates having its NRC ISFSI license in hand by 2019. By utilizing a PI like WCS, the DOE could begin construction as early as 2019 saving the DOE years if not decades of project start up and development time.
3. **Support of "Continued Storage" rulemaking** – If DOE is successful in developing and operating an ISF through a PI, they can integrate this into their submission to the NRC in support of challenges to "Continued Storage". As DOE pursues a broader waste management system this success will help the agency convince both Congress and the public that the "Continued Storage" rulemaking is appropriate.

4. **Utilizes Proven Consent Models** –The WCS initiative is focused on expanding an existing radioactive waste management facility where strong relationships and public trust already exist. The issue of state consent in Texas for an ISF is anticipated to be resolved through the passage of legislation outlining fees paid to both the state and the local community, similar to WCS's existing low-level disposal agreement with the State of Texas.
5. **Affords DOE the opportunity to broaden its focus** – DOE's overall integrated radioactive waste management system must address many challenges. The availability of an interim storage facility operated by a PI would allow a significant amount of SNF to be safely, cost-effectively, and securely stored. This would enable the DOE to shift its focus to solving the challenge of a permanent repository much sooner than if a government-owned ISF has to be sited, licensed and constructed.

Potential drawbacks or risks to a PI ISF are very similar to a federal ISF and the mitigations are very similar as well. Where there are potential risks with a PI, specific provisions can be included in the contract and in managing the project with the PI that provide significant risk mitigation to the DOE.

5. What assurances to the Government do you think would be appropriate, to ensure that SNF stored at a private ISF, would be managed effectively so as to contain costs to the Government?

The PI ISF will assure effective management of SNF and GTCC for the government at the PI ISF by:

- Consolidating ISF operations to reduce overall costs to the government compared to existing federal liabilities for storage costs at multiple nuclear power plant locations. Cost containment would also be assured through contract terms for PI ISF operations.
- Contract pricing provisions that are protective of the government's interests, which include performance based pricing. (The nature of a private enterprise is to provide a result in exchange for commercial consideration. If the customer does not get the expected result there are remedies regarding the commercial consideration.)
- Contract provisions that provide appropriate performance guarantees and financial assurance, and provisions on rights of successorship if the contractor fails to perform.
- Ensuring that the facility will be licensed and regulated by the NRC (just like a government-sites). SNF is currently safely stored at reactors in private ISFs licensed by the NRC. There are no different or inherent risk increases between an at-reactor ISF and a PI ISF.
- Selecting a site that has appropriate physical characteristics, geology, weather, and socioeconomic factors reducing long term licensing risks and associated costs.
- Selecting a site with appropriate state and local community consent, recognizing that "consent" may look different to different states and local communities.
- Using a contractor team that has appropriate experience in safely transporting and storing SNF and has a track record of safe and secure radiological facility operations.

These attributes can be further developed and used as criteria in a competitive procurement to select the best site/community/team(s) to host, build and operate a private ISF. Furthermore, the PI will adapt its transportation and storage program to work within the government's integrated waste management objectives as directed through DOE guidance and contract.

6. What possibilities are there with respect to business models for a PI, and what are the benefits and disadvantages of those models?

The compensation model for a government-owned facility requires the government to compete and execute contracts, secure appropriations and make payments for each phase of the facility development. A PI ISF presents an opportunity for the DOE to defer expenditures and make payments based on the completion of tangible milestones or performance metrics with significantly lower risk.

Any business model and associated contract will need to provide fair compensation for the following PI activities associated with ISF development and operations:

- Designing, licensing, and building an ISF and associated equipment
- Procuring spent fuel storage casks
- Procuring spent fuel transport casks, rolling stock and associated transport equipment
- Executing spent fuel cask transload and transportation activities, as applicable, from the ISFSIs to the PI ISF
- Executing cask receipt, unloading and placement into storage
- Long-term security, regulatory compliance, operations, aging management, and maintenance of the facility
- Management and administration of these activities

In order to attract private investment, the DOE will need to provide long term contracts that will provide the assurance of the long term cash flows that are needed in order to raise the required investment and reimburse investors. The agreements between the DOE and a PI will also need to include minimum volume guarantees in order to satisfy the risk concerns of investors. This approach provides protection for the PI's recovery of its investment while presenting no additional risks or financial burdens to the government above and beyond what would be required to build and operate its own ISF.

Additionally, the state and local community generally expect compensation for cooperation and services beyond jobs for the community. Compensation to the state and host community can be included as part of the contract with the PI, thus more clearly aligning the interests of the industry partner, the local community and the state.

While there are a number of alternative business models and contract structures for a private initiative, one option is fixed unit price for a specific quantity of spent fuel that the DOE intends to store at the ISF. This approach would require a minimum volume that provides appropriate compensation to the contractor.

While the unit of measure for the contract could be metric tons of uranium or heavy metal (MTHM), we believe that the underlying costs are more closely aligned and easier to manage based on a per "cask" basis as a unit of measure. With that foundation, we believe that the compensation to build

and operate an ISF and associated transportation program can be structured around three (3) fixed price contractual elements that should be subject to economic price adjustment and could also include elements of performance incentive:

- Transportation Fee ($/Cask/Mile) - Payable when a Cask is ready for transfer to the rail car or other conveyance. The fee rate is set to recover the cost of transportation infrastructure (cask, rail cars), and the transport fee to railroads. Such costs also include financing costs for expenditures that occur well in advance of cost recovery. We expect transport security to remain a federal function, not included in this fee, but we are open to discussion.
- Waste Acceptance Fee ($/Cask) – Payable when a Cask is unloaded at the ISF and accepted for Storage by the ISF operator. The fee rate is set to recover the cost of the design, licensing, and construction of the ISF and associated equipment and includes the cost of the new storage cask at the ISF and the cost to unload casks and transfer into storage casks. Such costs also include financing costs for expenditures that occur well in advance of cost recovery.
- Storage Fee ($/MTHM/Year) or ($/Year) – Payable annually (or monthly). The rate is established to recover costs of long-term security, regulatory compliance, operations, and maintenance of the facility, and the management and administration thereof.

Extension fees may be necessary to provide assurances to the host community that the waste will be transferred to a repository or other final disposition facility. One approach is for the Storage fee to escalate along with payment of other benefits if it is not removed within some predefined schedule

The Transportation Fee does not include loading of the canister into the transportation cask at the NPP, nor does it contain costs associated with any unique plant infrastructure upgrades or intermodal transport and transfer. The PI may be willing to undertake these additional work scopes, but they are not amenable to fixed price compensation for those variable aspects of transport.

The economic evaluation in our Environmental Report indicates that our proposed ISF (all phases) would have an economic benefit of $6.7 billion relative to the status quo (do nothing) based on two economic benefits which were quantifiable with existing information. The first quantifiable benefit would be the avoided reimbursements to power plant operators for storing spent fuel the government is obligated to dispose of under the NWPA. The estimated benefit of the proposed action was measured as the cost of continuing to reimburse operators of shutdown plants for storing spent nuclear fuel over the next 40 years under a “no action” scenario and subtracting the reduced reimbursement schedule, if the ISF is built.

Based upon the very conservative assumptions in this benefit-cost analysis, the proposed action would create a benefit to the federal government of $5.4 billion (not discounted). The second quantifiable benefit was the value of land at shutdown nuclear power plants that is currently barred from alternate use due to the presence of stored SNF. The overall value of land that could be returned to an economic use, if the site’s spent fuel was removed, was estimated to be worth $1.3

billion (not discounted). The total economic benefits from implementing the proposed action are $6.7 billion (not discounted).

These economic benchmarks do not consider the added economic benefit to the repository program of developing an extensive transportation infrastructure which is also usable by the repository program, and do not consider the economic benefits to the communities when a shutdown NPP site ISFSI is repurposed.

7. *How could a PI manage liabilities that might arise during the storage period?*

Dry storage of SNF is safely maintained at most nuclear power reactor sites throughout the United States in storage systems licensed by the NRC. The environmental impact and safety analysis for long-term dry storage was directly addressed in the NRC's recent Continued Storage rule, which stated that "the NRC is not aware of any issue that would cause it to question the technical feasibility of continued safe storage of spent fuel in dry casks."

For SNF in dry storage at ISFSI's across the country, the risk of radioactive release impacting human health and the surrounding environment is not credible, due to both the nature of SNF properties once removed from the reactor and the design of storage systems assuring its isolation and shielding from the external environment. The risk and potential liabilities associated with SNF in storage at a PI ISF is directly analogous to SNF currently stored at ISFSI sites around the United States. Moreover, the operational efficiencies offered by a PI ISF allow for application of advanced inspection and aging management programs and the infrastructure to mitigate any leaks or hardware failures on-site (including the use of overpacks and portable repackaging systems).

Ultimately the challenges with liabilities are the same whether the ISF is privately or federally managed. A range of appropriate liability management options could be negotiated as part of any contract between a PI and the DOE. For liability protection during storage period defined in the WCS license application, the Price-Anderson Act offers indemnification of contractors by the Department of Energy. To the extent that commercial insurance is required to confirm financial protection, WCS would seek eligible policy coverage.

8. *What state/local/tribal authorizations/approvals would be needed?*

Just like consent, authorizations and approvals for a PI ISF may look different for each state, local and tribal government affected by the facility. A potential host state and community should be allowed to express the manner in which, and conditions upon which, it intends to give its approval. As such, necessary authorizations and approvals for a potential PI ISF are likely to develop on the basis of each state's, local government and tribal custom and established legal and regulatory culture, and must be respected. One clear benefit of a PI is that it is the company who will be responsible for engagement with lawmakers, local and tribal stakeholders and not the government.

As with current WCS facility operations, the WCS ISF could be structured to provide a host fee to the state and local community in which the ISF is located. For our LLRW facilities, the Texas state

legislature passed legislation – that was then signed by the governor and became law, thus signaling both legislative and executive support for the project – whereby a percentage of gross revenue would be provided to both the state and the host county should a private company be licensed to operate a low level radioactive waste disposal facility in Texas. This established statute-based storage fee model provides long term durability with respect to the current cost incurred by DOE to store fuel. In addition, a Memorandum of Agreement was reached between requisite Texas state authorities and the Department of Energy, specifying additional rights and responsibilities of the parties. This model has proved effective in limiting counterparty resistance during the construction and operational phases of the project.

We also anticipate air permits, water discharge permits and other normal industrial type permits to be needed. In Texas all of these would be obtained through the TCEQ, which is also the agency that currently licenses disposal operations and holds Agreement State status with NRC. There is great value in having as many authorizations held in one agency as possible so the left and right hand are working in coordination, which makes the process efficient and more likely to succeed.

9. How can the Government continue to explore or implement the PI concept in a fair, open and transparent manner going forward?

We believe that the best course moving forward to ensure an open, transparent and fair process for the establishment of a PI role in an integrated SNF management system would be through the use of the well-known DOE Request For Proposal (RFP) process. Through the RFP process, the DOE would define its requirements and establish the criteria by which it would determine the proposal or proposals that best served the needs of the SNF management program, the interests of the stakeholders and the equities and interests of current contract holders. A pre-RFP meeting with interested parties could help identify contracting elements that the private sector believes should be incorporated as well as obtaining expectations from affected states and communities. As noted elsewhere in our responses, time is of the essence and we would urge the Department to ensure that funds requested as part of the FY '18 budget be dedicated to the development and issuance of an RFP during calendar year 2017 to secure the best opportunity for an accelerated timeline and the savings of tens of billions of dollars in federal monies.

Among the criteria that should be a part of the RFP, we feel the following items would ensure the DOE the greatest opportunity for a successful outcome:

a) The basis for a PI applicant assuring consent during the licensed life of the facility;
b) The demonstrated licensing and operational experience of the applicant;
c) The ability of the PI to also serve as the transportation agent for the movement of SNF from contract holder sites to the ISF;
d) The status and readiness of the proposed site; and
e) The capacity for expansion and additional missions at the ISF site, among others.

Separate and apart from the RFP process, the Department should also consider making funds available to communities that have expressed support for a PI, enabling them to hire consultants

and form advisory panels that would be able to monitor, assess and inform the public about various aspects of the program. This holds especially true if the Department decides to provide financial support for communities and others engaging with the federal government through the separate consent based siting process. Available resources should also be made available to off-set some of the private funding already expended for the development of a PI site.

10. ***What, if any, supporting agreements might be expected between the Government and the host state/tribe/local community associated with a PI?***

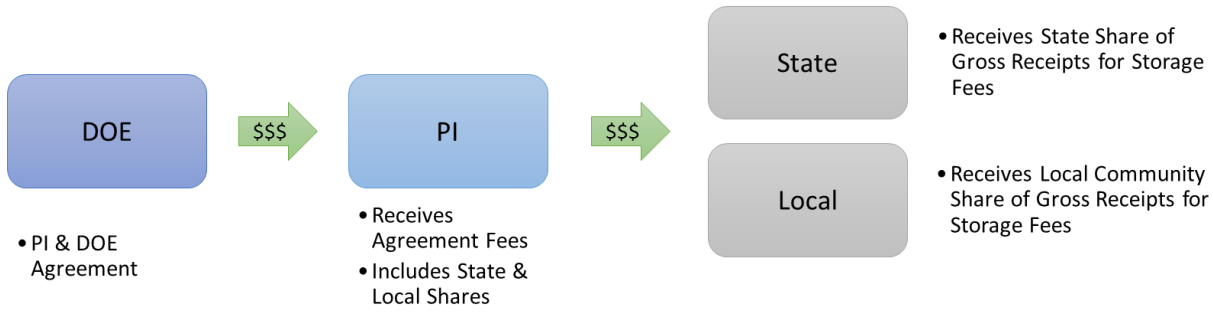
Specific to the WCS ISF, we expect the host state (Texas) to enter into a Memorandum of Agreement (MOA) with the DOE, most likely through the TCEQ. An MOA was entered into by the DOE and TCEQ for our federal LLRW disposal facility for certain inspections and other requirements and this model has been successful for both the federal government in meeting its requirements and the state and local stakeholders as they continue to support the DOE in their clean-up efforts. Andrews and Texas truly see themselves as partners with DOE and a resource and problem solver for the federal government. Those who have traveled Texas State Highway 176 have seen the sign reading "Andrews loves God, Country, and Supports Free Enterprise." The MOA is the mechanism by which the people of Texas, with consent from the Andrews community, engage with DOE.

Additionally, Texas may choose to enact legislation that could incorporate into statute the hosting support or other state requirements that it would expect in return to allow an ISF to store SNF in Texas. As an example, legislation was passed in Texas that assessed a fee of 25% of gross revenue to the state and 5% of gross revenue to the host county (Andrews) for the importation of out-of-compact LLRW. Likewise, there is a fee for federal waste that is 5% of gross revenue to the state and 5% to the county.

We expect that both Texas and Andrews County would require a gross revenue fee on the storage of SNF. We consider a state statute enshrining such fees to be a benefit as it would bind the hosting requirements more permanently than a MOA. It also builds upon a model that is currently in place and being successfully implemented today.

Andrews County, Andrews School District, the City of Andrews and the Andrews Hospital district are creating a Community Legacy Fund that will have an oversight group to evaluate proposed projects funded from the current fees being paid to the county. All the taxing entities as well as citizens at large will be represented on the oversight group to ensure community involvement in selecting projects to be funded.

New fee-based agreements between the PI and local and state governments would follow the precedents already established as presented in the figure below. Through this model DOE will continue to benefit from existing and proven consent-based processes.



Model for State & Local Community Compensation

11. What other considerations should be taken into account?

One of the federal government's primary considerations for developing an ISF for SNF will be addressing transportation requirements. Safe, secure and efficient transport operations are critical to the success of a pilot ISF and will depend heavily on contracting with private organizations that have extensive SNF transport experience. Equally important is having a single contractor integrate management of transportation and receipt of the SNF into storage at a PI ISF. Specialized transportation assets have to be developed and maintained, and transportation operations have to be fully funded. In addition, Section 180(c) of the Nuclear Waste Policy Act (NWPA) requires the government to provide technical assistance and training funds for public safety officials along transport routes. DOE has committed to providing those funds 3-5 years before the first shipment.

The specialized transportation casks and rail cars for shipping SNF have no other commercial applications. This bars shared use with other private sector operations as a means of reducing the government's expenditures. The full cost of developing, maintaining and using these assets will be passed on to the federal government.

Private development of transportation assets is preferred to ensure transportation projects are fully integrated with operational plans and schedules. To do this, long term contracts will be required to assure the private sector can recover their significant capital investment. Those long term contracts would benefit from line item funding, or from a revised SNF management approach that did not require annual Congressional appropriations. Selecting a single contractor for both transportation and ISF facility operations would provide additional opportunities for cost saving through integrated planning, single point program management and decision making. Choosing a PI with extensive and successful experience in spent fuel transportation and nuclear waste management operations would increase the chances for successful and efficient initial operations. Even with all of this, it will be necessary for the federal government to take title to the fuel as it leaves the utility site boundary. The utilities have stated this as a prerequisite for any off-site movement of their UNF.

Although activities previously performed in the US and regularly performed overseas for the small quantity of transportation assets needed to service a low volume pilot storage facility are well

established, one benefit of a pilot ISF is its use as a demonstration of new hardware and processes for commercial shipments of SNF in the US.

The costs of technical assistance and funds for training public safety officials along transport corridors are defined as a federal responsibility in the NWPA. DOE has issued a draft rule on how the required funding and assistance would be provided. DOE is encouraged to finalize the draft rulemaking and, as planned, prepare for awarding grants to states and tribes along transport corridors three to five years prior to the first shipment.

The DOE also has to establish a queue for shipments from the shutdown sites to a PI ISF. We recommend establishing some flexibility in the queue to accommodate the variety of storage systems and the abilities of the ISF. It is not expected that all systems at each site will initially be licensed for transport and storage at an ISF.

The queue is needed to define the schedule for asset acquisition and to allow the railroads to select transportation routes. Those transport routes will define the states and tribes eligible for initial 180(c) funding. The railroads have the legislative mandate to define routes based on their 27 point assessment of safety and security proscribed by 49 CFR Part 172.820, Appendix D.

Ideally, selecting a PI ISF for operations and for transportation would streamline coordination with the railroads for system operations. A PI could effectively participate in the railroad's public outreach, required by regulation, to ensure successful routing integration with operational plans at shipping sites and the ISF.

DOE should also consider establishing a deinventory study at each of the shutdown sites in order to establish the licensing, site preparations, handling equipment, and transportation modes required. The objective of this study will be to provide insight into the equipment and operations required to safely remove and transport the SNF from each site to the ISF.

12. ***Are there any alternative approaches to developing non-federally-owned facilities that might be proposed (e.g. how projects would be financed, anticipated regulatory and legal issues, etc.). If so, what are they, are there proposed solution, and how would the above questions be answered with respect to such approaches?***

We have no other alternative approaches at this time.

Summary

The benefits of an ISF make it an essential part of any integrated, efficient, phased and adaptive waste management program. A centralized ISF is complementary to and beneficial to the advancement of a repository program. Private ISF initiatives offer distinct advantages over government developed facilities and all potential drawbacks to a private initiative have direct parallels with government solutions. Additionally, PIs that provide centralized storage of fuel have an international record of success that encompass design, engineering, construction and operation of the ISF, as well as transportation, providing an excellent reference for the provision of similar services in the United States. It is also worth mentioning that all of the dry storage facilities at power plants in the US were designed, licensed, constructed and operated by the private sector.

We look forward to the next steps to advance a PI ISF.