

Final Environmental Assessment for
Proposed Renewal of NRC Material License No. SUC-1591
Water Remediation Technology, LLC

Performance-Based, Multisite License
for a Uranium Water Treatment Program

U.S. Nuclear Regulatory Commission
Office of Nuclear Material Safety and Safeguards
Division of Waste Management and Environmental Protection

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1.0 Introduction

By letter dated December 21, 2016, Water Remediation Technology, LLC (WRT) submitted an application to the United States Nuclear Regulatory Commission (NRC) to renew Source Materials License No. SUC-1591 for an additional ten years (WRT, 2016).¹ WRT's application also consisted of a second request seeking NRC authorization to expand the scope of WRT's licensed activities. License SUC-1591 was originally issued by the NRC on January 25, 2007 (NRC, 2007) and is a performance-based, multisite license that authorizes WRT to use its ion exchange technology to remove uranium from community drinking water systems.² On January 16, 2018, WRT revised its application to request a 20-year renewal term (WRT, 2018).

The proposed action is the NRC staff's approval or disapproval of WRT's application to renew its license and expand the scope of licensed activities. The NRC staff has conducted its environmental review in accordance with the NRC's environmental protection regulations in Title 10 of the Code of Federal Regulations (10 CFR) Part 51, which implement section 102(2) of the National Environmental Policy Act of 1969, as amended (NEPA). This document provides the results of the NRC staff's environmental review of the WRT requests; the staff's radiation safety review is documented separately in a Safety Evaluation Report (SER).

The NRC staff has prepared this Environmental Assessment (EA) in accordance with NRC requirements in 10 CFR 51.21 and 51.30, and with the associated guidance in NRC report NUREG-1748, "Environmental Review Guidance for Licensing Actions Associated with NMSS Programs" (NRC, 2003). In 10 CFR 51.14, an EA is defined as "a concise public document for which the Commission is responsible that serves to: (1) [b]riefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact; (2) [a]id the Commission's compliance with NEPA when no environmental impact statement is necessary; and (3) [f]acilitate preparation of an environmental impact statement when one is necessary."

1.1 The Need and Purpose for the Proposed Action

License SUC-1591 authorizes the licensee to possess, store, transfer, and dispose of source material for a community water system (CWS) by removing uranium from the CWS's drinking water supply using WRT's ion exchange technology, possessing source material in the uranium

¹ Sections 62 and 63 of the Atomic Energy Act of 1954, as amended, authorizes the NRC to issue licenses for the transfer, delivery, receipt, possession and use of source material (42 U.S.C. §§ 2092-93). The NRC's implementing regulations for source material licensing are set forth in 10 CFR Part 40. Source material is defined to mean: (1) Uranium or thorium, or any combination thereof, in any physical or chemical form or (2) ores which contain by weight one-twentieth of one percent (0.05%) or more of: (i) Uranium, (ii) thorium or (iii) any combination thereof. Source material does not include special nuclear material. (10 CFR 40.4).

² The expiration date for the initial SUC-1591 license was January 25, 2017. By filing its request for license renewal prior to the expiration date, WRT is in "timely renewal" and its current license remains in effect until the NRC disposes of WRT's license renewal request. 10 CFR 40.42(a).

recovery system (URS), and ultimately transferring and properly dispositioning the source material.

With its license renewal request, WRT also seeks to expand the scope of its licensed activities to include the use of its URS at customer facilities other than CWSs so as to remove uranium from non-drinking water sources (i.e., other contaminated water or wastewater sources). If approved by NRC staff, non-CWS site operators would then have the option of using WRT's URS to meet applicable cleanup and discharge limits. Such prospective WRT customers may include those treating and discharging surface water accumulated in a mined-out open pit (pit lake), or those pumping, treating, and re-injecting water from a contaminated plume in either a surface alluvial aquifer or a deep ground water aquifer.

1.2 Background and Regulatory Framework

In 1974, the United States Congress enacted the Safe Drinking Water Act (SDWA). The purpose of the SDWA was to establish national enforceable standards for drinking water quality and to guarantee that water suppliers monitor water to ensure that it meets national standards (<https://cfpub.epa.gov/watertrain/pdf/sdwa.pdf>). Regulations promulgated pursuant to the SDWA imposed specific requirements on the levels of contaminants (including uranium) that may be present in drinking water sources used for public consumption. On December 7, 2000, the U.S. Environmental Protection Agency (EPA) published in the *Federal Register* (65 FR 76708) a final rule that set, among other things, a maximum contaminant level (MCL) of 0.03 milligrams per liter (mg/L) [30 micrograms per liter (µg/L)] for uranium in community drinking water systems. Thus, CWSs were required to comply with the MCL by December 31, 2007, and needed to remove uranium from their drinking water supplies to quantities less than or equal to the MCL.

On September 7, 2005, R.M.D. Operations, LLC (RMD) submitted an application to the NRC for a performance-based, multisite service provider source material license for the removal of uranium in drinking water (RMD, 2005). RMD's license application proposed that NRC issue a license for RMD's uranium water treatment program as implemented by RMD in non-Agreement States wherein licensable concentrations of source material would be created.³ The NRC granted RMD's request and issued License SUC-1591 on January 25, 2007, for a period of 10 years. On March 12, 2009, NRC amended License SUC-1591 (Amendment No. 1) to change the licensee's name from RMD to WRT (NRC, 2009).

Since the initial granting of that license to RMD (now WRT) in 2007, NRC's regulations at 10 CFR 40.22 were modified in a 2013 rulemaking (78 FR 32310; May 29, 2013). In that

³ Under Section 274 of the Atomic Energy Act of 1954, as amended (42 U.S.C. § 2021), the NRC can relinquish its regulatory authority over certain types of radioactive material, including source material, to a State that enters into an agreement meeting the criteria of section 274; that State is then referred to as an "Agreement State." Presently, there are 38 Agreement States (Wyoming became the 38th Agreement State on September 30, 2018). A non-Agreement State is a State that has not entered into a Section 274 agreement and as such, is a State where the NRC has not relinquished any of its regulatory authority.

rulemaking, the NRC amended the general license limits in 10 CFR 40.22(a)(1) to be no more than 1.5 kilograms (kg) (3.3 pounds [lbs.]) of uranium and thorium in dispersible forms at any one time and to possess, use, and transfer no more than a total of 7 kg (15.4 lbs.) of uranium and thorium in any one calendar year.⁴ Additionally, the 2013 rulemaking expressly created a general license category for the receipt, possession, use and transfer of uranium removed during the treatment of drinking water (10 CFR 40.22(a)(3)). This general license allows the removal of no more than 7 kg (15.4 lbs.) of uranium, resulting from the treatment of drinking water, at any one time, with any person not to remove more than 70 kg (154 lbs.) of uranium from drinking water during a calendar year.⁵

In April 2012, the NRC issued Regulatory Issue Summary (RIS) 2012-06, “NRC Policy Regarding Submittal of Amendments for Processing of Equivalent Feed at Licensed Uranium Recovery Facilities.” Specifically, this guidance described the NRC’s policy that receipt and processing of “equivalent feed” (such as the uranium-laden ion exchange resins used in the WRT URS) at an NRC-licensed uranium recovery facility did not require the recovery facility’s license to be amended when (1) the resin is chemically and physically essentially the same as that which is currently processed at the uranium recovery facility, (2) the resin would be processed using the uranium recovery facility’s existing equipment, (3) the resulting yellowcake production did not exceed the uranium recovery licensee’s uranium production limit and (4) effects from processing of the resin stayed within the uranium recovery facility’s current environmental and safety review envelope (i.e., the licensing basis).

2.0 The Proposed Action

WRT has requested that the NRC renew License SUC-1591 for an additional 20-year term⁶. Presently, WRT operates only in seven Agreement States; it has no current operations in any non-Agreement State. Thus, renewal of License SUC-1591 would allow WRT to continue to have the opportunity to install and operate its URS at a CWS located in a non-Agreement State. The URS removes and safely contains uranium from CWS drinking water sources to levels at or below the uranium MCL, and to then transfer the extracted uranium to an appropriately licensed facility for either reuse (e.g., “yellowcake” production) or disposal.

WRT has also requested that the NRC expand the scope of WRT’s authorized licensed activities to include the removal of uranium from non-drinking water sources (e.g., mines, pit lakes, and groundwater remediation sites) in non-Agreement States. In response to an NRC staff “Request for Additional Information,” WRT further stated that the removal of uranium from non-drinking water sources would “assist site owners/operators in complying with relevant water

⁴ An NRC general license is authorized by an NRC regulation. An individual or entity meeting the applicable regulatory criteria is considered to hold an NRC general license. The applicable 10 CFR Part 40 regulation states “The general licenses provided in this part are effective without the filing of applications with the Commission or the issuance of licensing documents to particular persons.” 10 CFR 40.20(a).

⁵ 10 CFR 40.22(a)(3).

⁶ The NRC staff’s assessment of WRT’s request for a 20-year license renewal term is provided in the staff’s SER.

quality standards such as 'class of use' or discharge limits, or to make such remediated water legally and effectively useable in a given entity's process" (WRT, 2017).

The proposed action is the NRC staff's approval or disapproval of the WRT license amendment requests. If approved by the NRC, these amendments would be designated as Amendment No. 2 to License SUC-1591.

2.1 WRT's Uranium Recovery System – Description and Use

WRT uses a patented URS that relies on beds of resin treatment media with ion exchange technology to remove the uranium from the feed water. As the uranium-laden feed water is pumped through the treatment vessels, the uranium is preferentially adsorbed onto the treatment media. Designed to operate at relatively low pressures (i.e., less than 100 psi), the size of a uranium treatment vessel and the amount of treatment media required is determined, in part, by the following criteria:

- The flow rate and overall utilization of the feed water;
- The uranium concentration in the raw feed water;
- Height and/or room restrictions in the particular treatment building;
- The duration between WRT's treatment media exchanges (e.g., typically three (3) to five (5) years or longer for a URS).

WRT has three basic configurations for its water treatment systems, which are generally tied to the flow rate of the water system being treated (WRT, 2016). These configurations are:

- Portable Exchange System (PES) – Used for flow rates from about 189 to 227 liters per minute [lpm] (50 to 60 gallons per minute [gpm]), a PES unit is a modular system that uses a group of smaller treatment vessels or "bottles," connected in series and in parallel, to better match the flow rate of a well. Multiple "trains" of bottles (i.e., a set of bottle connected in series) can then be connected in parallel, with each train meant to treat approximately 38 lpm (10 gpm) of the total flow rate. Figures 2-6 and 2-7 of WRT's application (WRT, 2016) show examples of the PES unit.
- Modular Component System (MCS) – Used for flow rates from less than 379 lpm (100 gpm) up to about 757 lpm (200 gpm). The MCS is a prefabricated and skid-mounted system that can be delivered to the treatment site as a complete unit. Treatment for flow rates greater than 757 lpm (200 gpm) can be accomplished by breaking up the total flow by connecting and operating several individual MCS units ("trains") in parallel. Figure 2-2 of WRT's application (WRT, 2016) shows an example of an MCS unit.
- Field-Erected System – Used for flow rates from about 1893 lpm (500 gpm) up to about 5678 lpm (1,500 gpm) flow rate for a single treatment "train." This custom-designed system can be scaled up to about 11,356 lpm (3,000 gpm) for two (2) treatment systems

or trains connected in parallel. The treatment vessels would be fabricated offsite, with the overall system, treatment vessels, piping, and ancillary components field-erected on site. Figures 2-3 to 2-5 of WRT's application (WRT, 2016) show examples of field-erected systems.

Table 2-1 in WRT's application presents the expected range of uranium treatment system sizes and the associated quantities of resin treatment media (WRT, 2016).

The smaller URS (i.e., the PES and MCS units) can be placed in structures approximately 37 to 46 square meters [m^2] (400 to 500 square feet [ft^2]) in area. The smaller URS typically are located in either a separate treatment building/structure or in a separate treatment room attached to the WRT client's existing well house building or treatment building. The treatment room or building for larger field-erected systems can be as large as 111 to 186 m^2 (1,200 to 2,000 ft^2), potentially requiring a new addition to the treatment/well house for the system. In locations where inclement weather is not a major concern (e.g., southern California), the URS may be located on a pad in the open or under a covered structure with open sides (WRT, 2016).

In general, the water treatment facility for both CWSs and non-drinking water sources is secured. Under a renewed license, WRT would be required to implement certain security measure in its contracts to restrict access to the URS. At a minimum, the treatment building or well houses are locked, and nearly all sites secured with locked fences. In the more atypical situation of the URS being located in the open, outside of a building, such treatment sites generally are fenced and locked (WRT, 2016).

As discussed previously, WRT is also proposing use of its URS to remove uranium from non-drinking water sources. WRT's treatment equipment for non-drinking water sources would also be located in an existing treatment building or structure, or one constructed for WRT's URS, or on a pad in the open, possibly with temporary cover, at the treatment location. Depending on the WRT client's need, any of the three configurations described above could be employed at the site. Treatment of affected non-drinking water sources may take place over varying timeframes, depending on the need. For example, uranium treatment at a construction site may last several months, while efforts to treat and discharge water from a pit lake, or to pump, treat, and re-inject water from a contaminated ground water plume may take a number of years. As such, WRT uranium removal activities at non-drinking water sources will most likely occur for shorter timeframes than uranium removal activities at CWSs (WRT, 2016).

Once the treatment media is loaded with uranium, the URS is taken offline and isolated from the water supply system. The uranium-laden media is removed from the treatment vessel either through a pumping/slurry method or through a pneumatic vacuum method, with the treatment media dewatered of any treated water in the vessel. The dewatered uranium-laden media then is packaged for transport depending on the final disposition of the media. Transport options include: (1) a rollover container or tanker trailer; (2) Super-Sack bags approved for the radioactivity classification and mode of transport; and (3) "B-25" metal boxes, intermediate bulk containers smaller than Super-Sack capacities, and drums (typically 55- to 96-gal capacity)

[WRT, 2016]. The NRC will require, through license condition, that WRT retain ownership of the treatment media and will also take ownership of the uranium as it is loaded onto the treatment media.

Following loading of the uranium-laden treatment media for transport, WRT performs a site cleanup and an area survey for potential radiological contamination. WRT loads fresh media into the treatment vessel(s) to continue water treatment for its client (WRT, 2016).

WRT has two alternatives for the final disposition of the licensed material. The licensee's preferred alternative is to deliver the uranium-laden treatment media to a licensed uranium recovery facility, which will process the media as an equivalent feed material to recover the contained uranium. The other option is to deliver the spent media for disposal at an appropriately NRC- or Agreement State-licensed facility that can accept source material in the quantities and activities that correspond to WRT's spent treatment media.

Under either alternative, WRT arranges for transportation of the spent treatment media in U.S. Department of Transportation-approved transportation packages and vehicles by a properly permitted transportation contractor (WRT, 2016).

2.2 Operational Experience

Since the issuance of License SUC-1591 in 2006, WRT has contracted with CWSs in Agreement States and non-Agreement States to employ WRT's URS. WRT contracted with CWSs at one site in Virginia and two sites in New Jersey, when those States were non-Agreement States (i.e., when the WRT Virginia and New Jersey sites were under NRC jurisdiction) (RMD, 2007; RMD, 2009). Licensing authority for these sites was transferred to Virginia and New Jersey when those States became Agreement States. Currently, WRT operates its URS at nine CWS locations and at one non-drinking water site in seven Agreement States: California, Colorado, Georgia, Nebraska, New Jersey, South Carolina, and Virginia (WRT, 2017).

WRT's largest URS supports the CWS for the City of Grand Island, Nebraska. The well flow rate at this location is about 1325 lpm (3,500 gpm), with two field-erected systems operating in parallel. A schematic of this URS is provided in Figure 2-5 of WRT's license renewal application (WRT, 2016). Most of WRT's URS are operating at flow rates between 189 lpm (50 gpm) and 492 lpm (130 gpm), using skid-mounted MCS, with a couple sites operating at 2271 lpm and 3407 lpm (600 gpm and 900 gpm) respectively, using several MCS operating in parallel (WRT, 2017).

With respect to the use of WRT's URS for non-drinking water sources, WRT already is performing such uranium water treatment in one Agreement State and is currently preparing to conduct similar operations at a second site (WRT, 2016). The one current location is the URS operating at Cotter Corporation's Schwartzwalder Mine, a closed underground uranium mine located in Jefferson County, Colorado. This system treats uranium-contaminated water in a

near-surface, alluvial ground water system (WRT, 2016). WRT also has provided short-term uranium treatment of surface water at construction sites where the uranium concentration in the water was above the allowed discharge standard (WRT, 2016).

Further details about WRT's currently-operating URS can be found in the licensee's responses to NRC's request for additional information (RAI) (WRT, 2017).

2.2.1 Inspections:

As part of its response to NRC's RAI (NRC, 2017), WRT provided inspection reports issued by the relevant Agreement State licensing agency (WRT, 2017). The NRC staff's review of these inspection reports founds that several minor violations and items of non-compliance were identified, relating to personnel training, an access agreement, a decommissioning funding plan, and availability of records.

In July 2011, the State of Colorado noted in an inspection report that the efficiency of WRT's uranium recovery resin at the Schwartzwald Mine location was at a higher uranium concentration than expected, resulting in a greater loading of uranium than expected. Accordingly, WRT was required to submit a license amendment to the State for approval to increase the authorized amount of uranium which could be loaded on the resin and also to increase the total activity of uranium that could be possessed and handled (WRT, 2107).

In July 2017, a State of Illinois inspection report at a radium removal site identified two items of concern and commented that, in both instances, those involved appeared busy with operational activities without a corresponding focus on radiation safety issues (WRT, 2017).

2.2.2 Incidents (Spills and Leaks):

In its response to NRC's RAI, WRT also provided an accounting of spills and leaks over the past five years that have occurred at both its URS and radium removal system sites (WRT, 2017).

In October 2013, at the Grand Island, Nebraska site, a small amount of resin beads leaked from the underside of one of the URS treatment vessels (WRT, 2017). The leak resulted from a pinhole opening in the weld that attached a pipe "tee" to the bottom of the vessel, which is part of a drain pipe assembly used to remove resin from the treatment vessel. WRT estimated that approximately 1-2 liters of resin spilled, and given that the color of the recovered resin still appeared to be that of fresh resin, WRT considered that the spilled resin was lightly loaded with uranium (WRT, 2017). WRT cleaned up the spilled resin using a shop vacuum and sent a sample of the recovered resin for analysis. WRT conducted a contamination survey to ensure the cleanup activities were complete (WRT, 2017).

With respect to incidents involving its radium removal system, two separate spills occurred in late 2015 at the Water Treatment Facility in San Angelo, Texas, involving release of radium-contaminated media from a WRT radium removal system. The first in September 2015,

involved a spill of approximately 0.23 kg (0.5 lbs.) of resin, while the second in December 2015, involved a much larger spill of approximately 2722 to 3175 kg (6,000 to 7,000 lbs.) of resin (WRT, 2017). Both incidents were addressed in a timely manner by the Texas Department of State Health Services, and WRT was not cited for a violation in either incident (WRT, 2017).

2.2.3 Occupational and Public Radiological Dose:

WRT provided personnel dosimetry reports for the past five years to confirm that the doses to WRT field and radiological personnel are low and in compliance with WRT's as is reasonably achievable (ALARA) policy. Reports were provided for 2012 and 2016 indicating deep dose equivalents (DDE) for a one-year period to be in the range of 1 to 36 millirem (mrem) to any one individual (WRT, 2017). In comparison, the NRC's annual occupational dose limit in 10 CFR 20.1201 is 5,000 mrem.

In its license renewal application, WRT presented area badge dosimetry data from a sampling of WRT uranium systems located throughout the country (WRT, 2016). WRT's estimate of annual radiological doses based on this data ranged from 0.12 to 1.56 mrem per year (mrem/yr), which is well below the annual public dose limit in 10 CFR 20.1301 of 100 mrem/yr.

3.0 Affected Environment

Clients employing WRT's URS may use the URS in a variety of environmental settings. These may be urban, suburban, or rural locations, where, with respect to drinking water sources, the uranium is at or above the EPA MCL of 30 ug/l and the client is contracting with WRT for the use of the URS to remove the uranium to quantities less than or equal to the MCL. Along with its license renewal application, WRT has requested that its license be amended to allow WRT to use its URS to remove uranium from non-drinking water sources (WRT, 2016). WRT stated that such sites could include (1) mined-out open pit lakes where surface water has accumulated with uranium concentrations above discharge standards; (2) sites with a uranium contamination plume in groundwater down-gradient of a facility; (3) oil and gas exploration sites where uranium would be removed from drilling fluids and other solutions; and (4) other locations where construction has impacted water supplies. Many of these sites may be more remote than the CWS locations.

The amended license will include a license condition that authorizes WRT to install its URS only at those sites that are accessible either by (1) a public street, road, or highway, (2) a private road constructed by the client prior to entering into a contract with WRT for uranium removal services, or (3) a private road constructed by the client after it enters into a uranium removal services contract, with the road being constructed for a purpose other than the installation and operation of a URS. In addition, the amended license will also include a license condition that requires WRT to install its URS in either a building or structure (1) that existed prior to the client entering into a contract with WRT for uranium removal services, or (2) that will be constructed by the client in a previously cleared area, provided that the client cleared the area prior to entering into its contract with WRT. These license conditions will apply to both drinking water

and non-drinking water sites. If WRT seeks to install a URS at a site not meeting these license conditions, WRT would then need to submit a license amendment to the NRC for that specific site. In such a case, the NRC staff would conduct a site-specific environmental review prior to making its decision on whether to approve or disapprove the license amendment request.

4.0 Environmental Impacts of the Proposed Action

Land Use, Geology and Soils

As discussed in NRC's original licensing EA (NRC, 2006), potential impacts to land use, geology, and soils were expected to be small for the use of WRT's URS for community drinking water supplies. This determination was based on the following findings: (1) no land disturbance would result for URS sited at either existing CWS facilities or in small utility-type sheds near CWS well heads; (2) minor land disturbance (typically less than 929 m² [10,000 ft²]) would result for URS sited near well heads or outside of the CWS's existing structures; (3) most communities would likely require a building permit and erosion controls for construction or placement of a utility-type shed; and (4) there would be little effect on geology and soils, due to minor site grading and shallow foundation footings for the shed and minor trenching for electrical and plumbing utilities.

The NRC staff finds that WRT's operational experience with CWS facilities has been consistent with the NRC's 2006 environmental determinations with regards to impacts to land use, geology, and soils. WRT is not proposing changes to its operations or to the configuration of the URS. Additionally, should there be a spill of uranium-laden resin during a media exchange, WRT has response procedures in place for cleanup of such a release (WRT, 2016).

The amended license will include a license condition that authorizes WRT to install its URS only at those sites that are accessible either by (1) a public street, road, or highway, (2) a private road constructed by the client prior to entering into a contract with WRT for uranium removal services, or (3) a private road constructed by the client after it enters into a uranium removal services contract, with the road being constructed for a purpose other than the installation and operation of a URS. In addition, the draft amended license will also include a license condition that requires WRT to install its URS in either a building or structure (1) that existed prior to the client entering into a contract with WRT for uranium removal services, or (2) that will be constructed by the client in a previously cleared area, provided that the client cleared the area prior to entering into its contract with WRT. These license conditions will apply to both drinking water and non-drinking water sites. If WRT seeks to install a URS at a site not meeting these license conditions, WRT would then need to submit a license amendment to the NRC for that specific site. In such a case, the NRC staff would conduct a site-specific environmental review prior to making its decision on whether to approve or disapprove the license amendment request. Under these conditions, the NRC staff expects impacts to land use, geology, and soils would remain small and not significant for the continued use of WRT's URS with CWSs.

Similarly, the NRC staff expects that impacts to land use, geology, and soils arising from the use of the WRT URS at non-drinking water sites would be similar to those for CWS-related activities, given the similarity in URS configurations to be employed and WRT's operational procedures for both applications. Additionally, under the amended license, WRT's installation and operation of its URS would be governed by the same license conditions concerning buildings or structures and road accessibility that apply to CWS sites.

Therefore, for the expanded scope of licensed activities, environmental impacts to land use, geology and soils are expected to be small and not significant.

Transportation

As discussed in NRC's original licensing EA (NRC, 2006), potential impacts to transportation were expected to be small for WRT's URS for CWSs. This determination was based on the following findings: (1) the same roads used for typical water treatment operations would be used for the transportation of the URS and resulting source material and little additional usage of these roads would be expected; (2) inspections of the URS will be done in conjunction with normal inspections for equipment already contained within the CWS, so no additional trips would be required, with only a slight increase in trips for URSs located at well heads; (3) analysis of potential accident scenarios determined that the radiation doses to the public and to the environment from uranium-bearing water treatment resins under normal and spill conditions in the water treatment plant and during transportation are negligible and in the range of background variability; and (4) given the low probability of a spill involving loaded resins and the very small potential dose, transportation spills are not a concern with regard to transport of the material for the purpose of uranium recovery or disposal.

WRT's operational experience with CWS facilities has been consistent with the NRC's 2006 environmental determinations with regards to transportation impacts. WRT is not proposing changes to its operations or to the configuration of the URS. Additionally, in the low probability case of uranium-loaded resin during transport, WRT has transport accident response procedures and follow-up accident surveys in place (WRT, 2016).

The draft amended license will include a license condition that authorizes WRT to install its URS only at those sites that are accessible either by (1) a public street, road, or highway, (2) a private road constructed by the client prior to entering into a contract with WRT for uranium removal services, or (3) a private road constructed by the client after it enters into a uranium removal services contract, with the road being constructed for a purpose other than the installation and operation of a URS. Therefore, the NRC staff expects impacts to transportation would remain small and not significant for the continued use of WRT's URS with CWSs.

If the NRC approves WRT's request to expand the use of its URS at non-drinking water sites, then the NRC staff expects that overall transportation impacts will be greater, as the increased number of facilities would accordingly increase the number of trips to processing or disposal facilities. As WRT client sites are located throughout the country, a weighted average distance

between those sites and a uranium recovery or disposal facility is expected to be approximately 1000 miles (1609 kilometers). However, this estimate may be conservative because spent treatment media from two or more nearby treatment sites could be consolidated into a single trip due to the small load some of the smaller sites would generate (WRT, 2016). Additionally, under the amended license, WRT's installation and operation of its URS would be governed by the same license condition concerning road accessibility that apply to drinking water applications. Therefore, for the expanded scope of licensed activities, the NRC staff considers that transportation-related impacts to the environment are expected to be small and not significant.

Water Resources

As discussed in NRC's original licensing EA (NRC, 2006), potential impacts to water resources were expected to be small for WRT's URS for CWSs. This determination was based on the following findings: (1) the number of ground water wells affected is not expected to change; (2) while the locations of CWS are variable, it is unlikely that a CWS would be located in the 100-year flood plain; and (3) the potential for spills involving spent treatment media to which uranium is bound exists, but these spills could easily be cleaned up if the media were contained within the treatment shed, CWS facility, or even on the ground. The NRC will require WRT, through license condition, to install a secondary containment system to protect against a release of any media containing source material that could affect water resources for those URSs that will have a direct outlet to storm sewers, sanitary sewers, or drain fields.

WRT's operational experience with CWS facilities has been generally consistent with the NRC's 2006 environmental determinations with regards to impacts on water resources. There has been one accident related to a spilled resin that was lightly loaded with uranium that WRT was able to contain and cleanup (WRT, 2017). WRT is not proposing changes to its operations or to the configuration of the URS. In addition, the draft amended license will include a condition that requires WRT not to locate the URS on the 100-year flood plain unless its Safety and Environmental Review Panel determines that the reasonably foreseeable impacts of any floods upon an installed uranium removal system, including any uranium-laden treatment media, can be appropriately mitigated through application of best management practices and other prudent measures. Therefore, the NRC staff expects impacts to water resources would remain small and not significant for the continuation of the use of WRT's URS with CWSs.

With respect to non-drinking water sources, the NRC staff notes that both ground water and surface water resources contaminated with uranium can be treated using WRT systems. Impacts to water resources should be similar to those for CWS-related activities, given the similarity in URS configurations to be employed and WRT's operational procedures for both applications. Therefore, for the expanded scope of licensed activities, the NRC staff considers that environmental impacts to water resources would be expected to be small and not significant.

Ecological Resources

As discussed in NRC's original licensing EA (NRC, 2006), potential impacts to ecological resources (e.g., plant and animal resources) were expected to be small for WRT's URS for CWSs. This determination was based on the following findings: (1) a major spill is unlikely; (2) the secondary containment required by the renewed license should contain major spills; and (3) transportation accidents resulting in spills are unlikely, and if such spills occur, they are easily cleaned up.

WRT's operational experience with CWS facilities has been generally consistent with the NRC's 2006 environmental determinations with regards to impacts on ecological resources. WRT is not proposing changes to its operations or to the configuration of the URS.

The draft amended license will include a license condition that authorizes WRT to install its URS only at those sites that are accessible either by (1) a public street, road, or highway, (2) a private road constructed by the client prior to entering into a contract with WRT for uranium removal services, or (3) a private road constructed by the client after it enters into a uranium removal services contract, with the road being constructed for a purpose other than the installation and operation of a URS. In addition, the draft amended license will also include a license condition that requires WRT to install its URS in either a building or structure (1) that existed prior to the client entering into a contract with WRT for uranium removal services, or (2) that will be constructed by the client in a previously cleared area, provided that the client cleared the area prior to entering into its contract with WRT. These license conditions will apply to both drinking water and non-drinking water sites. If WRT seeks to install a URS at a site not meeting these license conditions, WRT would then need to submit a license amendment to the NRC for that specific site. In such a case, the NRC staff would conduct a site-specific environmental review prior to making its decision on whether to approve or disapprove the license amendment request. Therefore, the NRC staff expects that impacts would remain small and are not likely to adversely affect ecological resources, including threatened or endangered species or their critical habitats, for the continuation of the use of WRT's URS with CWSs.

Under the proposed action, WRT has also requested an expansion of its licensed activities to include use of the URS in non-drinking water remediation. Impacts to ecological resources, including threatened or endangered species or their critical habitats, should be similar to those for CWS-related activities, given the similarity in URS configurations to be employed and WRT's operational procedures for both applications. Additionally, under the amended license, WRT's installation and operation of its URS would be governed by the same license conditions concerning buildings or structures and road accessibility that apply to drinking water applications. Therefore, for the expanded scope of licensed activities, the NRC staff considers that environmental impacts are expected to be small and are not likely to adversely affect ecological resources.

Air Quality

As discussed in NRC's original licensing EA (NRC, 2006), potential impacts to air quality were expected to be small for WRT's URS for CWSs. This determination was based on the fact that the WRT URS is designed to be self-contained, thereby limiting, if not eliminating, potential public or occupational exposure to airborne uranium residuals or other particulates.

WRT's operational experience with CWS facilities has been generally consistent with the NRC's 2006 environmental determinations with regards to impacts to air quality. WRT is not proposing changes to its operations or to the configuration of the URS.

The draft amended license will include a license condition that authorizes WRT to install its URS only at those sites that are accessible either by (1) a public street, road, or highway, (2) a private road constructed by the client prior to entering into a contract with WRT for uranium removal services, or (3) a private road constructed by the client after it enters into a uranium removal services contract, with the road being constructed for a purpose other than the installation and operation of a URS. In addition, the draft amended license will also include a license condition that requires WRT to install its URS in either a building or structure (1) that existed prior to the client entering into a contract with WRT for uranium removal services, or (2) that will be constructed by the client in a previously cleared area, provided that the client cleared the area prior to entering into its contract with WRT. These license conditions will apply to both drinking water and non-drinking water sites. If WRT seeks to install a URS at a site not meeting these license conditions, WRT would then need to submit a license amendment to the NRC for that specific site. In such a case, the NRC staff would conduct a site-specific environmental review prior to making its decision on whether to approve or disapprove the license amendment request. Therefore, the NRC staff expects impacts to air quality would remain small and not significant for the continued use of WRT's URS with CWSs.

Under the proposed action, WRT also has requested an expanded scope of licensed activities to include use of the URS in non-drinking water remediation. Impacts to air quality should be similar to those for CWS-related activities, given the similarity in URS configurations to be employed and WRT's operational procedures for both applications. Additionally, under the amended license, WRT's installation and operation of its URS would be governed by the same license conditions concerning buildings or structures and road accessibility that apply to drinking water applications. Therefore, for the expanded scope of licensed activities, environmental impacts to air quality are expected to be small and not significant.

Noise

As discussed in NRC's original licensing EA (NRC, 2006), potential impacts to noise were expected to be small for WRT's URS for CWSs. This determination was based on the following findings: (1) construction of sheds or buildings to house the URS and associated utilities are expected to generate minor noise impacts; and (2) on limited occasions, diesel generator sets used during media exchanges will result in a minimal increase in noise impacts.

WRT's operational experience with CWS facilities has been generally consistent with the NRC's 2006 environmental determinations with regards to impacts on noise. WRT is not proposing changes to its operations or to the configuration of the URS. The draft amended license will include a license condition that authorizes WRT to install its URS only at those sites that are accessible either by (1) a public street, road, or highway, (2) a private road constructed by the client prior to entering into a contract with WRT for uranium removal services, or (3) a private road constructed by the client after it enters into a uranium removal services contract, with the road being constructed for a purpose other than the installation and operation of a URS. In addition, the draft amended license will also include a license condition that requires WRT to install its URS in either a building or structure (1) that existed prior to the client entering into a contract with WRT for uranium removal services, or (2) that will be constructed by the client in a previously cleared area, provided that the client cleared the area prior to entering into its contract with WRT. These license conditions will apply to both drinking water and non-drinking water sites. If WRT seeks to install a URS at a site not meeting these license conditions, WRT would then need to submit a license amendment to the NRC for that specific site. In such a case, the NRC staff would conduct a site-specific environmental review prior to making its decision on whether to approve or disapprove the license amendment request. Therefore, the NRC staff expects noise impacts to remain small and not significant for the continued use of WRT's URS with CWSs.

Under the proposed action WRT also has requested an expanded scope of licensed activities to include use of the URS in non-drinking water remediation. Noise impacts should be similar to those for CWS-related activities, given the similarity in URS configurations to be employed and WRT's operational procedures for both applications. Additionally, under the amended license, WRT's installation and operation of its URS would be governed by the same license conditions concerning buildings or structures and road accessibility that apply to drinking water applications. Therefore, for the expanded scope of licensed activities, the NRC staff expects noise impacts to remain small and not significant.

Historic and Cultural Resources

As discussed in NRC's original licensing EA (NRC, 2006), potential impacts to historic and cultural resources were expected to be small for WRT's URS for CWSs. This determination was based on the following findings: (1) the construction of new buildings for containment of the URS potentially may require assessment of historic and cultural resources, but any such impacts will likely be negligible; and (2) it is expected that where the CWS and URS are located, building permits would be required, as well as review by a local architectural board or its equivalent and historical and cultural resource issues would likely be addressed at that time.

WRT's operational experience with CWS facilities has been generally consistent with the NRC's 2006 environmental determinations with regards to impacts on historic and cultural resources. WRT is not proposing changes to its operations or to the configuration of the URS. The amended license will include a license condition that authorizes WRT to install its

URS only at those sites that are accessible either by (1) a public street, road, or highway, (2) a private road constructed by the client prior to entering into a contract with WRT for uranium removal services, or (3) a private road constructed by the client after it enters into a uranium removal services contract, with the road being constructed for a purpose other than the installation and operation of a URS. In addition, the amended license will also include a license condition that requires WRT to install its URS in either a building or structure (1) that existed prior to the client entering into a contract with WRT for uranium removal services, or (2) that will be constructed by the client in a previously cleared area, provided that the client cleared the area prior to entering into its contract with WRT. These license conditions will apply to both drinking water and non-drinking water sites. If WRT seeks to install a URS at a site not meeting these license conditions, WRT would then need to submit a license amendment to the NRC for that specific site. In such a case, the NRC staff would conduct a site-specific environmental review prior to making its decision on whether to approve or disapprove the license amendment request. Therefore, the NRC staff expects that there would be no adverse effects on historic properties from the continuation of the use of WRT's URS with CWSs.

Under the proposed action WRT also has requested an expanded scope of licensed activities to include use of the URS in non-drinking water remediation. Impacts to historic and cultural resources should be similar to those for CWS-related activities; however, there is more potential for impacts because this type of water treatment has more of a chance to be located in an open, rural, under-developed setting. Nevertheless, under the amended license, WRT's installation and operation of its URS would be governed by the same license conditions concerning buildings or structures and road accessibility that apply to drinking water applications. These license conditions should ensure that there would be no adverse effects on historic and cultural resources. If WRT seeks to install a URS at a site not meeting these license conditions, WRT would then need to submit a license amendment to the NRC for that specific site. In such a case, the NRC staff would conduct a site-specific environmental review prior to making its decision on whether to approve or disapprove the license amendment request.

Visual and Scenic Resources

As discussed in NRC's original licensing EA (NRC, 2006), potential impacts to visual and scenic resources were expected to be small for WRT's URS for CWSs. This determination was based on the fact that construction of small sheds and buildings to house the URS may result in minor visual impacts.

WRT's operational experience with CWS facilities has been generally consistent with the NRC's 2006 environmental determinations with regards to impacts on visual and scenic resources. WRT is not proposing changes to its operations or to the configuration of the URS.

The draft amended license will include a license condition that authorizes WRT to install its URS only at those sites that are accessible either by (1) a public street, road, or highway, (2) a private road constructed by the client prior to entering into a contract with WRT for uranium removal services, or (3) a private road constructed by the client after it enters into a uranium

removal services contract, with the road being constructed for a purpose other than the installation and operation of a URS. In addition, the draft amended license will also include a license condition that requires WRT to install its URS in either a building or structure (1) that existed prior to the client entering into a contract with WRT for uranium removal services, or (2) that will be constructed by the client in a previously cleared area, provided that the client cleared the area prior to entering into its contract with WRT. These license conditions will apply to both drinking water and non-drinking water sites. If WRT seeks to install a URS at a site not meeting these license conditions, WRT would then need to submit a license amendment to the NRC for that specific site. In such a case, the NRC staff would conduct a site-specific environmental review prior to making its decision on whether to approve or disapprove the license amendment request. Therefore, the NRC staff expects impacts to visual and scenic resources would remain small and not significant for the continuation of the use of WRT's URS with CWSs.

Under the proposed action, WRT also has requested an expanded scope of licensed activities to include use of the URS in non-drinking water remediation. Impacts to visual/scenic resources should be similar to those for CWS-related activities, given the similarity in URS configurations to be employed and WRT's operational procedures for both applications. Additionally, under the amended license, WRT's installation and operation of its URS would be governed by the same license conditions concerning buildings or structures and road accessibility that apply to drinking water applications. Therefore, for the expanded scope of licensed activities, environmental impacts to visual/scenic resources are expected to be small and not significant.

Socioeconomic

As discussed in NRC's original licensing EA (NRC, 2006), potential impacts to socioeconomic resources were expected to be small for WRT's URS for CWSs. This determination was based on the following findings: (1) costs associated with providing uranium removal from drinking water would likely be passed on to consumers of the water in the form of higher rates for water; (2) additional work related to construction of the URS may provide temporary jobs, and additional work related to the operation of the URS may provide a few permanent jobs; and (3) the amount of additional taxes or the number of jobs created are expected to be negligible on the local community.

WRT's operational experience with CWS facilities has been generally consistent with the NRC's 2006 environmental determinations with regards to impacts on socioeconomic resources. WRT is not proposing changes to its operations or to the configuration of the URS. Therefore, the NRC staff expects socioeconomic impacts to remain small and not significant for the continued use of WRT's URS with CWSs.

Under the proposed action, WRT also has requested an expanded scope of licensed activities to include use of the URS in non-drinking water remediation. Impacts to socioeconomic resources should be similar to those for CWS-related activities, given the similarity in URS configurations to be employed and WRT's operational procedures for both applications.

Therefore, for the expanded scope of licensed activities, the NRC staff expects socioeconomic impacts to be small and not significant.

Environmental Justice

As discussed in this section of the EA, the NRC staff does not expect that the proposed action (to include an expanded scope of licensed activities) would cause noticeable impact on any population. Therefore, the NRC staff considers there are no disproportionately high and adverse human health and environmental effects on minority or low income populations.

Public and Occupational Health

As discussed in NRC's original licensing EA (NRC, 2006), potential impacts to public and occupational health were expected to be small for WRT's URS for CWSs. This determination was based on the following findings: (1) the WRT URS will remove uranium concentrations in drinking water above the MCL, reducing the public's exposure to uranium; (2) public access to the URS will be restricted by keeping the URS inside sheds or within existing CWS buildings and (3) WRT has instituted a radiation protection program, incorporating ALARA limits, to satisfy the NRC's radiation protection requirements in 10 CFR Part 20, "Standards for Protection Against Radiation."

WRT's operational experience with CWS facilities has been generally consistent with the NRC's 2006 environmental determinations with regards to impacts on public and occupational health. WRT is not proposing changes to its operations or to the configuration of the URS. Additionally, WRT has calculated the potential annual dose to workers conducting media exchanges or transporting uranium residuals to be a fraction of the allowable limits prescribed in NRC's 10 CFR Part 20 radiation protection regulations. In the highly unlikely event of a release of uranium residuals outside the water treatment facility, WRT will initiate emergency response procedures designed to safely contain and remediate such a release (WRT, 2016). Therefore, the NRC staff expects impacts to remain small and not significant for the continued use of WRT's URS with CWSs.

Under the proposed action WRT also has requested an expanded scope of licensed activities to include use of the URS in non-drinking water remediation. Impacts to public and occupational health should be similar to those for CWS-related activities, given the similarity in URS configurations to be employed and WRT's operational procedures for both applications. Therefore, for the expanded scope of licensed activities, the NRC staff considers that impacts to public and occupational health are expected to be small and not significant.

Waste Management

As discussed in NRC's original licensing EA (NRC, 2006), potential impacts to waste management were expected to be small for WRT's URS for CWS. This determination was based on the presumption that the uranium-laden resin removed from the URS would be

disposed at a permitted waste facility or transferred to a licensed uranium recovery facility that would extract the uranium from the resin for use as equivalent feed material.

WRT's operational experience with CWS facilities has been generally consistent with the NRC's 2006 environmental determinations with regards to impacts on waste management. WRT is not proposing changes to its operations or to the configuration of the URS. Therefore, the NRC staff expects waste management impacts to remain small and not significant for the continued use of WRT's URS with CWSs.

Under the proposed action, WRT also has requested an expanded scope of licensed activities to include use of the URS in non-drinking water remediation. Impacts to waste management should be similar to those for CWS-related activities, given the similarity in URS configurations to be employed and WRT's operational procedures for both applications. Therefore, for the expanded scope of licensed activities, the NRC staff considers that impacts to waste management are expected to be small and not significant.

4.1 Environmental Impacts of the Alternatives to the Proposed Action

For the purposes of this EA, the NRC staff has evaluated the no-action alternative, that is denial of WRT's license renewal request and by default, denial of its expanded scope request—in effect, WRT's multisite SUC-1591 license would expire. The NRC staff also evaluated a partial alternative involving approval of WRT's license renewal request, but not its expanded scope request, such that WRT would only be authorized to continue to use its URS at CWS sites in non-Agreement States under its multisite license.

The no-action alternative (i.e., denial of the license renewal request) would have no impact on current WRT operations, as those operations occur exclusively in Agreement States, where WRT is subject to applicable State law and regulation and operates in accordance with its Agreement State licenses. As such, WRT could continue to operate in its current locations as well as in other potential, future Agreement State locations if the NRC denies the license renewal request. Thus, a denial of the license renewal request would only forestall WRT from operating in a non-Agreement State under its multisite license.

If the NRC exercises the no-action alternative, then for potential CWS clients, WRT could choose to apply to the NRC for a specific license for each potential client site). If, however, WRT chose not to apply for such a specific license, then the affected CWS would not be able to utilize the WRT's URS to meet the EPA-mandated uranium MCL for drinking water. The CWS would then have to rely upon other alternative treatment methodologies or technologies to meet the EPA-mandated uranium MCL for drinking water. These other alternatives were previously analyzed by the NRC staff in its 2006 EA to support the initial licensing to RMD (NRC, 2006). In this regard, the CWS could employ treatment technologies similar to ion exchange technology, or possibly, reverse osmosis, or alternately, the CWS could choose to blend together water from different wells and aquifers, to fall below the uranium MCL of 0.03 mg/L. If a similar treatment technology was used, the NRC staff found in its 2006 EA that impacts would be very similar to

the use of RMD's URS. If the CWS was to blend waters, the potential existed for consumers to receive higher levels of uranium, however, those levels would still fall below the MCL. Therefore, the NRC staff has determined that the no-action alternative is likely to present very similar environmental impacts that the proposed action would likely have with respect to CWS facilities.

In assessing environmental impacts for CWSs under the partial alternative (denial of the expanded scope request), the NRC staff noted that it had evaluated the potential environmental impacts of authorizing WRT to operate at CWS sites in its 2006 EA. The NRC staff's evaluation of WRT's performance since 2007 has confirmed the findings and conclusions of the 2006 EA. Therefore, the NRC staff has determined that the partial alternative will present the same environmental impacts that the proposed action would likely have with respect to CWS facilities.

With respect to non-drinking water sites, under both the no-action alternative and the partial alternative, WRT could choose to apply for a specific license for each potential non-drinking water site. If WRT chose not to submit a specific license application for a given non-drinking water site, then that site would not be impacted by WRT operations. The owners and operators of such a non-drinking water site would then have to consider other alternative treatment methodologies or technologies to reduce uranium levels or would have to forego reducing the uranium levels altogether (non-drinking water sites are not subject to EPA's SDWA regulations).

5.0 Site Registration and Regulatory Exemptions

5.1 WRT Site Registration System

Under its current NRC specific license, SUC-1591, Amendment No. 1, License Condition (LC) #20 (NRC, 2009), WRT is authorized to "register," with the NRC, those CWS sites where WRT intends to operate a URS.⁷ The site registration is performed by written notification to the NRC staff. Specifically, LC #20 of the current WRT license states, in part, that "Notification to the NRC shall be made by the last day of the month for any uranium removal system that becomes operational in the preceding month." The written notification must also contain the name and location of CWS where the URS has become operational and a facility description summary.

WRT is required to make these notifications, regardless of whether the uranium removal activity at the CWS would be covered under the 10 CFR 40.22(a)(3) general license or whether it would fall outside the scope of the general license, and thus be subject to the current specific license. The notification to the NRC staff may be made after the URS has been installed and become operational. Thus, the current site registration system serves as an alternative to WRT submitting a site-specific license amendment request that seeks NRC approval prior to installing and operating the URS at a given CWS. Although the NRC staff does not expressly approve the expansion of WRT's activities to new CWSs under the current license, such activities are subject to NRC enforcement.

⁷ This site registration system was authorized in the initial SUC-1591 license, issued to RMD, in 2007.

From an environmental compliance perspective, this site registration system presented little concern as WRT would most likely install and operate its URS within pre-existing structures. In Section 7.1 of the 2006 EA that was prepared prior to the issuance of the initial SUC-1591 license, the NRC staff stated,

The RMD URS' will be sited at either existing CWS facilities or in small utility-type sheds near CWS well heads. For URS' sited at or within CWS structures, no effects on land use, geology, or soils would be expected, since no infrastructure construction would be required. For URS' sited near well heads or outside of the CWS' existing structures, minor land disturbance would be expected and primarily centered around initial small-scale grading and site construction. Land disturbance would be expected to be less than 10,000 square feet in most instances because of the bounding limitation of a system with a 3,000 gpm flow rate. Most likely, most communities would require a building permit for construction or placement of a utility-type shed, as well as erosion controls for land disturbance activities. The minor land disturbance associated with construction would have little effect on geology and soils, since land disturbance would not be expected to extend beyond minor site grading and shallow foundation footings for the shed and minor trenching for electrical and plumbing utilities.

For the reasons described herein, the NRC staff has determined that the installation and operation of URSs in CWS facilities under a renewed license would not have a significant impact upon the human environment.

Under the proposed action, the NRC must also consider WRT's request to expand the scope of its licensed activities to include installation and operation of URSs at non-drinking water sites. Approving WRT's request will increase the number and the variability of the types of sites at which WRT may install and operate its URS. In order to allow WRT to continue to use the site registration system, and at the same time, to properly account for the expanded scope of licensed activities, the draft amended license includes siting requirements to ensure that the installation and operation of a URS will not result in any significant environmental impact. Specifically, the draft amended license will include a license condition that requires WRT to install its URS in either a building or structure (1) that existed prior to the client entering into a contract with WRT for uranium removal services, or (2) that will be constructed by the client in a previously cleared area, provided that the client cleared the area prior to entering into its contract with WRT. In addition, the draft amended license will include a license condition that authorizes WRT to install its URS only at those sites that are accessible either by (1) a public street, road, or highway, (2) a private road constructed by the client prior to entering into a contract with WRT for uranium removal services, or (3) a private road constructed by the client after it enters into a uranium removal services contract, with the road being constructed for a purpose other than the installation and operation of a URS.

These license conditions will apply to both drinking water and non-drinking water sites. If WRT seeks to install a URS at a site not meeting these license conditions, WRT would then need to

submit a license amendment to the NRC for that specific site. In such a case, the NRC staff would conduct a site-specific environmental review prior to making its decision on whether to approve or disapprove the license amendment request.

5.2 WRT Site Registration System, Regulatory Exemptions

The Atomic Energy Act of 1954, as amended (AEA), the NRC's primary statutory authority, does not prohibit the site registration system put into place by the initial SUC-1591 license. There are, however, two NRC regulations that can be construed as requiring an applicant or licensee to identify the specific site locations of its proposed license activities as a prerequisite to receiving NRC authorization to operate at those sites: 10 CFR 40.32(c) and 10 CFR 40.41(c).

NRC regulation 10 CFR 40.32(c), "General requirements for issuance of specific licenses," states that an application will be approved if "the applicant's proposed equipment, facilities and procedures are adequate to protect health and minimize danger to life or property." NRC regulation 10 CFR 40.41(c), "Terms and conditions of licenses," states that "Each person licensed by the Commission pursuant to the regulations in this part shall confine his possession and use of source or byproduct material to the locations and purposes authorized in the license."

In the interests of regulatory clarity and efficiency, the NRC intends to exempt WRT from the regulatory requirements of 10 CFR 40.32(c) and 10 CFR 40.41(c), to extent that such regulations can be construed as prohibiting the use of a site registration system. The NRC's authority to grant an exemption from a 10 CFR Part 40 regulation is 10 CFR 40.14(a). An applicant or a licensee may request an exemption from an NRC regulation, or the NRC, on its own initiative, may grant an exemption to its own regulations. In order to grant these exemptions, the NRC must make the requisite findings under 10 CFR 40.14(a), namely, that the grant of these exemptions are authorized by law, will not endanger life or property or the common defense and security, and are otherwise in the public interest.

As discussed above, the License SUC-1591 site registration system is not prohibited by the AEA. Additionally, the NRC staff finds that WRT's operational experience with its URS, as discussed in this EA and evaluated in the NRC staff's SER, has not and will not endanger life or property or the common defense and security. Furthermore, the NRC staff finds that WRT's installation and operation of its URS is in the public interest, in that, by contracting with client CWSs, the URS removes uranium from drinking water sources to meet the 30 ug/l MCL set by EPA, and that in addressing uranium contamination in non-drinking water sources, the URS will allow the client to meet applicable Federal and State regulatory standards for the discharge of the affected and treated waters.

Finally, the NRC staff finds that the site registration system model remains an appropriate mechanism to account for URS site installations at CWS sites and will be an appropriate mechanism to account for such installations at non-drinking water sites. In this regard, the administrative costs associated with processing a site-specific license amendment request for

each URS installation outweigh any benefits associated with requiring site-specific license amendments. The siting requirements that will be included in any renewed license (see section 4.2 above) should ensure that any environmental impacts arising from the installation and operation of a URS will not be significant (if WRT cannot meet the siting criteria for a particular URS installation, it will then be required to submit a license amendment request).

Therefore, pursuant to 10 CFR 40.14(a) and as set forth in the SER, the NRC, upon its own initiative, will grant WRT exemptions from the requirements of 10 CFR 40.32(c) and 10 CFR 40.41(c), to extent that such regulations can be construed as prohibiting the use of a site registration system.

6.0 Agencies and Persons Consulted

National Historic Preservation Act of 1966 (NHPA) Section 106 and Endangered Species Act of 1969 (ESA) Section 7 Consultation

For the purposes of this EA, the NRC staff determined that, per 36 CFR 800.3 (a)(1)⁸, consultation under Section 106 of the National Historic Preservation Act of 1966 (NHPA) is not warranted for the renewal of License SUC-1591. Under the amended license, WRT would be required by license condition to install its URS in either a building or structure (1) that existed prior to the client entering into a contract with WRT for uranium removal services, or (2) that will be constructed by the client in a previously cleared area, provided that the client cleared the area prior to entering into its contract with WRT. In addition, the amended license will include a license condition that authorizes WRT to install its URS only at those sites that are accessible either by (1) a public street, road, or highway, (2) a private road constructed by the client prior to entering into a contract with WRT for uranium removal services, or (3) a private road constructed by the client after it enters into a uranium removal services contract, with the road being constructed for a purpose other than the installation and operation of a URS. These license conditions are expected to prevent impacts to historic and cultural resources.

Additionally, the NRC staff determined that consultation under Section 7 of the Endangered Species Act of 1969 (ESA) is not warranted for the renewal of License SUC-1591. The NRC considers that the license conditions discussed in the preceding paragraph that are to be included in the amended license would prevent impacts to threatened or endangered species and their critical habitat.

NRC Agreement State Review and Comment on the Draft EA

By letters dated July 5, 2018 (NRC, 2018), the NRC staff requested comment on a draft of this EA from a total of seven NRC Agreement States where the NRC staff understood that WRT was currently licensed: California, Colorado, Georgia, Nebraska, New Jersey, South Carolina, and

⁸ 36 CFR 800.3 (a)(1) states, "If the undertaking is a type of activity that does not have the potential to cause effects on historic properties, assuming such historic properties were present, the agency official has no further obligations under section 106 of this part."

Virginia. Responses were received from six of the seven Agreement States – the State of Nebraska did not provide comments. The following States stated they had no comments on the draft EA or objections to the draft EA's conclusions: California (California, 2018), Colorado (Colorado, 2018), and Georgia (Georgia, 2018).

The New Jersey's Department of Environmental Protection, which licenses WRT as a service provider, stated that NRC's description of the environmental impacts of the proposed action was adequate, but considered that the draft EA did not provide justification for the 20-year renewal of WRT's license (New Jersey, 2018). The NRC staff has revised this EA to note that the staff's assessment of WRT's request for a 20-year license renewal term is provided in the staff's SER (see the footnote in section 2.0 of this EA).

The South Carolina's Bureau of Land & Waste Management, Infectious and Radioactive Waste Section stated that WRT's expanded scope of the use of its ion exchange process to treat contaminated water was acceptable and that the State concurred with the NRC staff that there would be minimal impact to the environment (South Carolina, 2018).

The Virginia's Department of Health stated that they concurred with NRC staff's conclusion that the renewal of WRT's NRC license would not significantly affect the quality of the human environment. They further noted that WRT, RMD, or the client specified in WRT's RAI response do not appear in the State's database as a specific or general licensee (Virginia, 2018).

7.0 Conclusion

Based on its review of the proposed action, namely, the renewal of NRC License SUC-1591 for an additional 20-year term and the expansion of WRT's authorized licensed activities to include the installation and operation of URSs at non-drinking water sites, and in accordance with the requirements in 10 CFR Part 51, the NRC staff has determined that the proposed action would not significantly affect the quality of the human environment. Furthermore, approval of the proposed action would not result in an increased radiological dose to workers or members of the public. The NRC staff has determined that pursuant to 10 CFR 51.31(a), the preparation of an environmental impact statement (EIS) is not required for the proposed action and that a finding of no significant impact (FONSI) is appropriate.

8.0 Preparers

Monika Coflin, Project Manager
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9.0 Sources Used

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