NUCLEAR REGULATORY COMMISSION

[Docket No. 50-607; NRC-2022-0114]

Regents of the University of California, University of California-Davis McClellan Nuclear Research Center Training, Research, Isotopes, General Atomics Reactor

AGENCY: Nuclear Regulatory Commission.

ACTION: Environmental assessment and finding of no significant impact; issuance.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is considering renewal of Operating Facility License No. R-130, held by the Regents of the University of California for the University of California Davis (UCD, the licensee), for the continued operation of the McClellan Nuclear Research Center (MNRC) Training, Research, Isotopes, General Atomics (TRIGA) reactor (the reactor, facility), located in the city of North Highlands, Sacramento County, California. In connection with the renewed license, the licensee also seeks to operate at a maximum licensed power level of 1.0 megawatt-thermal (MWt). The NRC is issuing an environmental assessment (EA) and finding of no significant impact (FONSI) associated with the proposed action.

DATES: The EA and FONSI referenced in this document are available on **[INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**.

ADDRESSES: Please refer to Docket ID **NRC-2022-0114** when contacting the NRC about the availability of information regarding this document. You may obtain publicly available information related to this document using any of the following methods:

- **Federal Rulemaking Website:** Go to https://www.regulations.gov and search for Docket ID **NRC-2022-0114**. Address questions about Docket IDs in Regulations.gov to Stacy Schumann; telephone: 301-415-0624; email: Stacy.Schumann@nrc.gov. For technical questions, contact the individuals listed in the “For Further Information Contact” section of this document.

- **NRC’s Agencywide Documents Access and Management System (ADAMS):** You may obtain publicly available documents online in the ADAMS Public

Documents collection at https://www.nrc.gov/reading-rm/adams.html. To begin the search, select "Begin Web-based ADAMS Search." For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by email to PDR.Resource@nrc.gov. For the convenience of the reader, the ADAMS accession numbers are provided in a table in the "Availability of Documents" section of this notice.

- **NRC's PDR:** You may examine and purchase copies of public documents, by appointment, at the NRC's PDR, Room P1 B35, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852. To make an appointment to visit the PDR, please send an email to PDR.Resource@nrc.gov or call 1-800-397-4209 or 301-415-4737, between 8:00 a.m. and 4:00 p.m. Eastern Time (ET), Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Kevin Folk, Office of Nuclear Material Safety and Safeguards, telephone: 301-415-6944; email: Kevin.Folk@nrc.gov; or Geoffrey Wertz, Office of Nuclear Reactor Regulation, telephone: 301-415-0893; email: Geoffrey.Wertz@nrc.gov. Both are staff of the U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

SUPPLEMENTARY INFORMATION:

I. Introduction

The NRC is considering renewal of Facility Operating License No. R-130, held by Regents of the University of California, which authorizes operation of the MNRC training and isotopes production TRIGA reactor, located in North Highlands, Sacramento County, California. The renewed license would authorize continued operation of the MNRC training and isotopes production TRIGA reactor for an additional 20 years from the date of issuance of the renewed license. By letter dated July 6, 2020, UCD revised its June 11, 2018, license renewal application and associated environmental report to reflect its decision to reduce the licensed thermal operating power level to a maximum of

1.0 MWt, to eliminate pulsing capability and to exclude irradiation of explosive materials in the reactor tank.

As required by section 51.21 of title 10 of the *Code of Federal Regulations* (10 CFR), "Criteria for and identification of licensing and regulatory actions requiring environmental assessments," the NRC staff prepared this EA documenting its environmental review. Based on the results of the NRC staff's environmental review as documented in the EA that follows, the NRC has determined not to prepare an environmental impact statement for the proposed renewed license and is issuing a FONSI in accordance with 10 CFR 51.32, "Finding of no significant impact."

II. Environmental Assessment

Facility Site and Environs

The UCD MNRC reactor is a natural-convection-cooled TRIGA-type reactor that began operation in January 1990, by the U.S. Air Force at the McClellan Air Force Base. The NRC issued Facility Operating License No. R-130 on August 13, 1998, and transferred the license to the Regents of the University of California by letter dated April 13, 1999. The reactor is housed in the three-story MNRC building within the McClellan Business Park, on land that was part of the former McClellan Air Force Base, and located approximately 8 miles (mi) (13 kilometers (km)) northeast of Sacramento, California. The UCD has operated the MNRC reactor to support educational purposes, research, outreach programs, and the United States' energetic device industry.

The MNRC reactor is housed in a room constructed of reinforced concrete and corrugated steel. The MNRC reactor is positioned in a large, water-filled cylindrical tank, which provides both cooling and shielding. The MNRC reactor is fueled with standard TRIGA reactor fuel elements, which are composed of low-enriched uranium-zirconium-hydride fuel, and clad in stainless steel. Natural circulation of the primary coolant in the reactor tank transfers the heat from the reactor core to the primary cooling system, and through a water-to-water heat exchanger connected to the secondary cooling system. The secondary cooling system rejects the heat to the environment through the facility's

mechanical draft cooling tower. Makeup water is supplied by the Sacramento Suburban Water District. The MNRC reactor is equipped with systems to monitor radiation. The ventilation system functions to ensure that there are no uncontrolled or unmonitored gaseous effluent releases to the atmosphere. Radioactive effluents released from the stack are continuously monitored for isotopic analysis and radioactive quantity. The radioactive doses to any member of the public are maintained at levels that are below the limits of 10 CFR part 20, "Standards for Protection Against Radiation."

A detailed description of the MNRC reactor and its operations can be found in the revised safety analysis report (SAR), (included in the list of documents associated with the license renewal application and can be found in Section IV "Availability of Documents" at the end of this notice).

Description of the Proposed Action

The proposed action would renew Facility Operating License No. R-130 for a period of 20 years from the date of issuance of the renewed license. The proposed action would authorize the MNRC reactor to operate at a nominal steady-state power of 1.0 MWt, without pulsing and square wave operation, and would exclude the irradiation of explosive materials in the reactor tank. The proposed action is in accordance with the licensee's application dated June 11, 2018, as supplemented on July 6, 2020, and September 22, 2021 (the renewal application). The NRC issued the current operating license, as amended, on August 13, 1998. The current license was set to expire at midnight on August 13, 2018. In accordance with 10 CFR 2.109, "Effect of timely renewal application," the existing license remains in effect until the NRC takes final action on the renewal application.

Need for the Proposed Action

The proposed action is needed to allow the continued operation of the MNRC reactor to provide irradiation services for various researchers at universities worldwide, U.S. national laboratories, and U.S. private industry. Irradiation services include seed mutagenesis studies, geochronology irradiations, and radiation hardness test for

electronics. A significant use of the facility is the performance of neutron radiography on energetic devices used for U.S. Department of Defense applications and the space industry. Further, the MNRC reactor provides educational experiences for UCD's students and students at other regional universities. UCD also offers an outreach program at the MNRC to expose high school and middle school students to the nuclear sciences.

Environmental Impacts of the Proposed Action

The environmental impacts of the proposed action are described in this notice. As discussed further, the proposed action will not have a significant environmental impact. The proposed action will not require any physical changes to the facility, and the impacts are similar to those occurring during past operations. Separate from this EA, the NRC staff is performing a safety evaluation report (SER), which will be available with the renewed license, if issued.

Radiological Impacts

Environmental Effects of Reactor Operations

Gaseous radioactive effluents resulting from the routine operation of the MNRC are Ar-41 and N-16. These nuclides are released to the environment from the reactor building from an exhaust stack on the roof that combines the ventilation exhausts from both the reactor building interior and the radiography bays. The MNRC stack discharge length is 60 ft (18.3 m) and has an airflow rate of 5,678 cubic feet (160.8 cubic meters) per minute. Because the half-life of N-16 is approximately 7 seconds, the release from the reactor stack is insignificant because most of the N-16 produced in the reactor coolant would decay before reaching the stack. Ar-41 is by far the most significant radionuclide released as a gaseous effluent during normal reactor operations. The maximum release of Ar-41 would occur from continuous operation at full power. The licensee calculated the Ar-41 concentration to be 4.45×10^{-7} µCi/ml exiting the exhaust stack under full power operations. The annual release of Ar-41 under these conditions would be 35.9 curies per year (Ci/yr). From this information, the licensee calculated the

maximum annual dose to a member of the public to be 1.5 millirem (mrem). This meets the 100 mrem per year (mrem/yr) (1 millisieverts per year (mSv/yr) dose equivalent to the maximally exposed individual in 10 CFR 20.1301, “Dose limits for individual members of the public.” The licensee’s annual reports, as supplemented by UCD’s response to the NRC staff’s request for additional information, for the 5 years of operation from 2016 through 2020 show that the maximum actual recorded release of Ar-41 was 35.9 Ci in 2020. As reflected in UCD’s response, this exposure would result in a conservative estimated annual dose of 1.5 mrem/yr (0.015 mSv/yr) to a member of the public. This dose is well below the 100 mrem/yr (1 mSv/yr) limit specified in 10 CFR 20.1301. Further, this annual radiation dose of 1.5 mrem/year does not exceed the as low as reasonably achievable (ALARA) air emissions dose constraint of 10 mrem (0.1 mSv) specified in 10 CFR 20.1101, “Radiation protection programs,” paragraph (d).

Liquid radioactive wastes are produced as a result of normal operation of the MNRC reactor, and typically consist of miscellaneous neutron activation product impurities and fission products in the reactor coolant. Since most of these activation products can be removed from the reactor coolant by the filtration system and the demineralizer resins, these radioactive materials are typically disposed as solid radioactive waste. It is UCD/MNRC policy to minimize the release of radioactive liquid waste and, when possible, liquid radioactive wastes that are generated are normally converted into a solid waste for offsite disposal. Nevertheless, UCD/MNRC may release liquid radioactive effluent to the sanitary sewer in compliance with 10 CFR 20.2003 limits and sanitary sewer acceptance criteria. The MNRC annual reports for the 5 years of operation from 2016 through 2020 show that the MNRC had no liquid radioactive waste releases into the sanitary sewer system.

Low-level solid radioactive waste generated from reactor operations at the MNRC are primarily demineralizer resins, mechanical filters, used encapsulations from experiment irradiations, rags, paper towels, plastic bags, rubber gloves, and other miscellaneous contaminated items. These wastes are packaged in metal drums or

boxes within the restricted area and temporarily stored in a weatherproof enclosure at the site boundary until shipment for disposal or transfer to a waste broker. UCD last shipped low-level radioactive waste from the MNRC in 2014. The shipment consisted of one B-25 box containing 98 cubic ft (2.8 cubic m) of contaminated materials with an activity of 54 microcuries. Once transferred, the low-level waste broker ships and disposes of the waste in accordance with all applicable regulations for radioactive materials.

No spent (irradiated) fuel will be permanently stored at MNRC either in the reactor tank or in the fuel pits during the license renewal term. The U.S. Department of Energy provides fuel for use at the MNRC and retains title to the fuel. It is also obligated to take the fuel from the site for final disposition when it can no longer be used in the reactor. UCD does not anticipate any changes in spent fuel handling during the proposed license renewal term.

As described in chapter 11 of the SAR, and verified through NRC staff review of the licensee's annual reports for the 5 years of operation from 2016 through 2020, personnel exposures are well within the limits set by 10 CFR 20.1201, "Occupational dose limits for adults," and are ALARA in accordance with 10 CFR 20.1101(b). The licensee tracks exposures of personnel monitored with dosimeters, and the annual reports for the 5 years of operation from 2016 through 2020 show that the personnel exposures (total effective dose equivalent) were usually less than one percent of the occupational limit of 5,000 mrem (50 mSv) per year. The greatest individual exposure (annual) over the last 5 years was 149 mrem (1.49 mSv) in 2018. No changes in reactor operation that would lead to an increase in occupational dose are expected or proposed as a result of the proposed action.

The radiation monitoring systems associated with reactor operations at the MNRC are provided and maintained as a means of ensuring compliance with radiation limits established under 10 CFR Part 20. The MNRC monitoring systems consist of area monitors, continuous air monitors, portable radiation survey instruments, personnel

monitors, and stack gas and particulate monitors, as described in section 11.1.5 of the SAR. The stack particulate and gas monitoring systems measure the beta-gamma activity emitted by radioactive particulates and the activity of gaseous radioactive nuclides, respectively, that are exhausted through the MNRC exhaust stack. Perimeter monitoring at the MNRC consists of dosimeters that detect X-ray and gamma radiation.

The licensee conducts an environmental monitoring program to record and track the radiological impact of the MNRC operation on the surrounding unrestricted area. The environment outside the reactor building is monitored by passive optically stimulated luminescence dosimeters, which are replaced quarterly, and sent to the vendor for exposure analysis. The dosimeters are located at 37 sites within the McClellan Industrial Park and 7 sites outside the industrial park. MNRC Health Physics Branch staff analyze the results to ensure that the reported doses are below 10 CFR part 20 limits, and to monitor for trends that would indicate unusual or elevated exposures. The annual reports for the 5 years of operation from 2016 through 2020 show that the measured doses were below 30 mrem (0.3 mSv) (excluding natural background exposure) and well below the specified limits to the public as required by 10 CFR Part 20. Year-to-year trends in exposures are consistent between monitoring locations. Also, no apparent correlation exists between total annual reactor operation and annual exposures measured at the monitoring locations.

The licensee also monitors offsite groundwater. Samples are collected at a public water supply well located approximately 2 mi (3.2 km) west of the MNRC in the city of Sacramento. Water samples are collected by a UCD contractor on a quarterly basis and analyzed for gross alpha, gross beta, and tritium, and also by gamma spectroscopy. Review of the annual reports over the last 5 years of operation (2016 through 2020) shows no discernible effect of MNRC operations on groundwater quality. Tritium results have been below the minimum detectable activity range.

Based on the review of monitoring data for the period 2016 through 2020, the NRC staff concludes that operation of the MNRC does not have any significant

radiological impact on the surrounding environment. No changes in reactor operation that would affect off-site radiation levels are expected or proposed as a result of the proposed action. Therefore, the proposed action would not have a significant radiological impact.

Environmental Effects of Accidents

Accident scenarios are discussed in Chapter 13 of the SAR. The accidents analyzed in chapter 13 range from anticipated events to a postulated fission product release with radiological consequences that exceed those of any accident considered to be credible. This limiting accident is referred to as the maximum hypothetical accident (MHA). The licensee considers a cladding rupture of one highly irradiated fuel element with no decay followed by instantaneous release of fission products into the air to be its MHA for the MNRC. This accident would involve the release of halogens and noble gases to the reactor confinement building and into the environment. The licensee uses this scenario to calculate the maximum concentration of fission products that might be present in the reactor room air following the MHA. The licensee calculated doses to facility personnel during a 5 minute evacuation duration, and also calculated the dose to a member of the public outside the facility during the 2 hours it would take the entire plume of released radioactive material to pass. The licensee estimated an occupational dose of 300 mrem (3 mSv), and a dose of less than 1 mrem (0.01 mSv) to the maximally-exposed member of the public.

Separate from this EA, the NRC staff is reviewing UCD's MHA analyses of the potential radiological consequences that may result from the proposed license renewal. The results of the NRC staff's safety review will be documented in a safety evaluation report that will be made publicly available. If the NRC concludes that the radiological consequences of the MHA are within 10 CFR part 20 dose limits, then the MHA and the proposed action would not have a significant impact with respect to the radiological consequences of the MHA.

Conclusion – Radiological Impacts

In the application for license renewal, the licensee has not proposed any physical changes to the reactor facility design, or adverse changes to facility operating conditions, that would significantly affect facility operation; therefore, there would be no changes in the types or quantities of routine effluents that may be released off site. The licensee has systems in place for controlling the release of radiological effluents and implements a radiation protection program to monitor personnel exposures and releases of radioactive effluents. Accordingly, there would be no increase in routine occupational or public radiation exposure as a result of the proposed action. Based on the information previously discussed, the NRC staff finds that the proposed action will not significantly increase the probability and consequences of accidents.

The license renewal would not significantly change reactor operations. As previously discussed, information in the application and data reported to the NRC by the licensee for the last 5 years of reactor operation were evaluated to determine the radiological impact. The NRC staff found that releases of radioactive material and personnel exposures were all well within applicable regulatory limits. Based on this evaluation, the continued operation of the reactor would have no significant radiological impacts.

Non-Radiological Impacts

The proposed action does not involve any change in the operation of the reactor, any change in the emissions, or any change in the heat load dissipated to the environment. No new construction or other land disturbing activities are proposed. The proposed action would not result in any land use changes or increase in noise or air emissions, and would not have a significant impact on air quality, noise, visual resources, ecological resources. The proposed license renewal would have no direct impacts on surface water or groundwater resources because water would continue to be supplied from the Sacramento Suburban Water District's public water supply system and the licensee proposes no increase in water use or effluent discharge. Heat produced by MNRC reactor operations is ultimately released to the environment through the

secondary cooling system and the cooling tower. No increased thermal effects on the environment would result from the proposed action.

UCD would continue to use small quantities of commercially available water treatment chemicals in the reactor secondary cooling system and in cooling tower to ensure proper operation of the system. The secondary coolant system is essentially a recirculation loop, so much of the water and the chemical compounds are retained in the system. Some chemical residuals may enter the environment through evaporation in the cooling tower and through an overflow line that is routed to the sanitary sewer in accordance with sewer acceptance criteria. These chemical compounds are approved for use by the U.S. Environmental Protection Agency or other applicable State regulatory agencies and their use does not represent a significant environmental impact.

Hazardous chemicals may be used in experiments at the MNRC reactor, but no releases of potentially hazardous chemicals to the environment occur during normal facility operation. Therefore, the NRC staff concludes that the proposed action would have no significant non-radiological impacts.

Other Applicable Environmental Laws

In addition to the National Environmental Policy Act, which requires Federal agencies to consider the environmental impacts of proposed actions, the NRC has responsibilities that are derived from other environmental laws, which include the Endangered Species Act, Coastal Zone Management Act, Fish and Wildlife Coordination Act, National Historic Preservation Act, and Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.” The following presents a brief discussion of impacts associated with resources protected by these laws and related requirements.

Endangered Species Act

The Endangered Species Act (ESA) was enacted to prevent further decline of endangered and threatened species and to restore those species and their critical habitat. Section 7 of the ESA requires Federal agencies to consult with the U.S. Fish

and Wildlife Service (FWS) or National Marine Fisheries Service regarding actions that may affect listed species or designated critical habitats. The NRC staff conducted a search of Federally listed species and critical habitats that have the potential to occur in the vicinity of the MNRC reactor using the FWS's Environmental Conservation Online System Information for Planning and Conservation system. Seven Federally listed species have the potential to occur within the vicinity of the MNRC reactor: giant garter snake (*Thamnophis gigas*), California red-legged frog (*Rana draytonii*), California tiger salamander (*Ambystoma californiense*), delta smelt (*Hypomesus transpacificus*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), vernal pool fairy shrimp (*Branchinecta lynchi*), and vernal pool tadpole shrimp (*Lepidurus packardi*). However, none of these species are likely to occur near the MNRC reactor due to a lack of suitable habitat. The McClellan Business Park, in which the MNRC reactor is situated, has been developed and is in use for research and educational purposes for many decades. Additionally, operation of the MNRC reactor has no direct nexus to the natural environment that could otherwise affect Federally listed species. No critical habitats occur in the area. Accordingly, the NRC staff concludes that the proposed license renewal of the MNRC reactor would have no effect on Federally listed species or critical habitats. Federal agencies are not required to consult with the FWS if they determine that an action will not affect listed species or critical habitats. Thus, the ESA does not require consultation for the proposed MNRC reactor license renewal, and the NRC staff considers its obligations under ESA section 7 to be fulfilled for the proposed action.

Coastal Zone Management Act

The Coastal Zone Management Act (CZMA), in part, encourages States to preserve, protect, develop, and, where possible, restore coastal resources. Individual states are responsible for developing a Federally approved Coastal Management Plan and implementing a coastal management program in accordance with such a plan. Section 307(c)(3)(A) of the CZMA requires that applicants for Federal permits whose

proposed activities could reasonably affect coastal zones certify to the licensing agency that the proposed activity would be consistent with the state's coastal management program. Sacramento County is not within California's approved coastal zone. Therefore, a consistency determination is not required for the proposed action.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act requires Federal agencies that license water resource development projects to consult with the FWS (or National Marine Fisheries Service, when applicable) and the State wildlife resource agencies regarding the potential impacts of the project on fish and wildlife resources.

The proposed action does not involve any water resource development projects, including any of the modifications relating to impounding a body of water, damming, diverting a stream or river, deepening a channel, irrigation, or altering a body of water for navigation or drainage. Therefore, no coordination with other agencies pursuant to the Fish and Wildlife Coordination Act is required for the proposed action.

National Historic Preservation Act

The National Historic Preservation Act (NHPA) requires Federal agencies to consider the effects of their undertakings on historic properties. As stated in the NHPA, historic properties are any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in the National Register of Historic Places.

The nearest National Register of Historic Places listed historic property is the Sacramento Air Depot Historic District located approximately 150 ft (47 m) south-southeast of the MNRC facility. The historic air depot headquarters building and residential area are located approximately 0.5 mi (1 km) east of the MNRC facility. The Sacramento Air Depot Historic District, located on McClellan Air Force Base, consisting of original buildings and structures, was the first of six bases authorized by the Wilcox Act of 1935 and was the only depot located west of the Rocky Mountains. The historic district consists of 43 buildings, 7 structures, and 1 object (McClellan Mall and flagpole).

The buildings and structures in the historic district appear almost exactly as they did in photographs taken between 1937 to 1939.

Operation of the MNRC reactor has not likely had any impact on this historic property. A request for a section 106 project review was submitted to the State Historic Preservation Officer (SHPO) regarding this undertaking and determination. By letter dated July 8, 2020, the California SHPO concurred that this action would not affect any historic properties. Based on this information, the proposed license renewal and the continued operation of the MNRC reactor would have no adverse effect on historic properties located near the MNRC reactor.

Executive Order 12898 – Environmental Justice

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" (59 FR 7629; February 16, 1994), directs Federal agencies to identify and address the disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations, to the greatest extent practicable and permitted by law.

The environmental justice impact analysis evaluates the potential for disproportionately high and adverse human health and environmental effects on minority and low-income populations that could result from the relicensing and the continued operation of the reactor. Such effects may include human health, biological, cultural, economic, or social impacts. Minority and low-income populations are subsets of the general public residing around the reactor, and all are exposed to the same health and environmental effects generated from activities at the reactor.

Minority Populations in the Vicinity of the MNRC Reactor — According to the U.S. Census Bureau's 2010 Census, approximately 42 percent of the total population (approximately 951,000 individuals) residing within a 10-mi (16-km) radius of the MNRC reactor identified themselves as minorities. The largest minority populations were Hispanic, Latino, or Spanish origin of any race (approximately 194,000 or 20 percent) followed by Asian (approximately 82,000 or 9 percent). According to the 2010

Census, 52 percent of the Sacramento County population identified themselves as minorities, with persons of Hispanic, Latino, or Spanish origin of any race, Asians, and Black or African Americans comprising the largest minority populations (22 percent, 14 percent, and 10 percent, respectively). According to the U.S. Census Bureau's 2019 American Community Survey 1-year Estimates, the minority population of Sacramento County, as a percent of the total population, had increased to about 56 percent.

Low-income Populations in the Vicinity of the MNRC Reactor — According to U.S. Census Bureau's 2015–2019 American Community Survey 5-Year Estimates, approximately 155,000 persons and 27,000 families (approximately 15 and 11 percent, respectively) residing within a 10-mi (16-km) radius of the MNRC reactor were identified as living below the Federal poverty threshold. The 2019 Federal poverty threshold was $26,172 for a family of four. According to the U.S. Census Bureau's 2019 American Community Survey Census 1-Year Estimates, the median household income for the State of California was $80,440 while approximately 8 percent of families and 12 percent of the state population were found to be living below the Federal poverty threshold. Sacramento County had a lower median household income average ($72,017) and a similar percentage of families (8 percent) and a slightly higher percentage of persons (13 percent) living below the poverty level.

Impact Analysis — Potential impacts to minority and low-income populations would mostly consist of radiological effects; however, radiation doses from continued operations associated with the proposed license renewal are expected to continue at current levels and would be below regulatory limits. Based on this information and the analysis of human health and environmental impacts presented in this EA, the proposed license renewal would not have disproportionately high and adverse human health and environmental effects on minority and low-income populations residing in the vicinity of the MNRC reactor.

Environmental Impacts of the Alternatives to the Proposed Action

As an alternative to license renewal, the NRC considered denying the proposed action (i.e., the "no-action" alternative). If the NRC denied the request for license renewal, reactor operations would cease and decommissioning would be required sooner than if a renewed license were issued. Therefore, the environmental effects of decommissioning would occur sooner under the no-action alternative than if a renewed license were issued. Decommissioning would be conducted in accordance with an NRC-approved decommissioning plan, which would require a separate environmental review under 10 CFR 51.21. Cessation of reactor operations would reduce or eliminate radioactive effluents. However, as previously discussed in this EA, radioactive effluents from reactor operations constitute a small fraction of the applicable regulatory limits. Therefore, the environmental impacts of license renewal and the denial of the request for license renewal would be similar. In addition, denying the request for license renewal would eliminate the benefits of teaching, research, and services provided by the MNRC reactor.

Alternative Use of Resources

The proposed license renewal does not involve the use of any different resources or significant quantities of resources beyond those associated with current facility operations and previously considered in the issuance of Facility License No. R-130 for the reactor on August 13, 1998.

Agencies and Persons Consulted

In satisfaction of its obligations under the NHPA, the NRC consulted with the California SHPO, as previously described. In addition, on June 1, 2022, the NRC notified the California State official (State Liaison Officer), Mr. David Hochschild, Chair, California Energy Commission, of the proposed action. The NRC received no reply. On June 23, 2022, the NRC notified Mr. Justin Cochran, Senior Nuclear Policy Advisor & Emergency Coordinator, California Energy Commission, and Mr. Gonzalo Perez, Chief, Radiological Health Branch (RHB), California Department of Public Health. By email

dated June 24, 2022, Mr. Perez replied on behalf of the RHB and expressed appreciation for the NRC's partnership and transparency. In Mr. Perez's reply, he noted that the RHB acknowledges the radiological aspects of the EA and had reviewed the EA for possible effects on the public and environment, with no additional comments.

III. Finding of No Significant Impact

The NRC is considering renewal of Facility License No. R-130, held by the Regents of the University of California for the UCD, which would authorize the continued operation of the MNRC reactor for an additional 20 years from the date of issuance of the renewed license.

On the basis of the EA included in Section II of this notice and incorporated by reference in this finding, the NRC staff finds that the proposed action will not have a significant impact on the quality of the human environment, and will not significantly affect the environment surrounding the MNRC. This is because the proposed action will result in no significant radiological impacts from continued operations as the types or quantities of effluents that may be released off site would not change. No changes in land use would occur or increases in noise or air emissions. Continued operations under the proposed action would have no significant impacts on air quality, noise, visual resources, surface water or groundwater resources, terrestrial or aquatic resources, or on any other environmental resource conditions. Additionally, the proposed action would have no effect on Federally listed species or designated critical habitats, would not affect historic properties, and would not result in environmental justice impacts. Therefore, the NRC concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC has determined that there is no need to prepare an environmental impact statement for the proposed action.

The NRC considered information provided in the licensee's application, as supplemented, and the review of related environmental documents. Section IV in this notice lists the environmental documents related to the proposed action and includes information on the availability of these documents.

IV. Availability of Documents

The documents in the following table are available to interested persons through one or more of the following methods, as indicated.

Document Description	ADAMS Accession No.
LICENSE RENEWAL APPLICATION	
University of California, Davis - Renewal of Facility Operating License No. R-130, Regents of the University of California, Docket No. 50-607, dated June 11, 2018.	ML18179A501
University of California, Davis. McClellan Nuclear Research Center TRIGA Research Reactor - Environmental Report, dated June 11, 2018.	ML18271A212
University of California, Davis. McClellan Nuclear Research Center. TRIGA Research Reactor - License Renewal Application. Updated Safety Analysis Report. Rev. 6. 04/30/18, dated June 11, 2018.	ML18271A211
University of California, Davis. McClellan Nuclear Research Center - MNRC License (R-130) Renewal Application Package Docket Number 50-607, dated July 6, 2020.	ML20188A368
University of California, Davis. McClellan Nuclear Research Center - Environmental Report, License Renewal Application, dated July 6, 2020.	ML20238B993
University of California, Davis. McClellan Nuclear Research Center - Safety Analysis Report, License Renewal Application, Rev. 6. 06/10/20, dated July 6, 2020.	ML20238B984
University of California, Davis. McClellan Nuclear Research Center - UC Davis MNRC Cover Letter for Response to Request for Supplemental Information, dated September 22, 2021.	ML21265A541
University of California, Davis. McClellan Nuclear Research Center - Reactor Environmental Report, dated September 22, 2021.	ML21265A548
University of California, Davis. McClellan Nuclear Research Center - UC Davis MNRC Response to NRC Staff Request for Additional Information Regarding Licensing Renewal Application Letter Issued February 8, 2022, dated March 30, 2022.	ML22089A158
OTHER REFERENCED DOCUMENTS	
University of California, Davis. McClellan Nuclear Research Center. 2014 Annual Report, dated June 29, 2015.	ML15191A047
University of California, Davis. McClellan Nuclear Research Center. 2016 Annual Report, dated December 31, 2016.	ML17181A173
University of California, Davis. McClellan Nuclear Research Center. 2017 Annual Report, dated December 31, 2017.	ML18178A602

University of California, Davis. McClellan Nuclear Research Center. 2018 Annual Report, dated March 2, 2020.	ML20062C059
University of California, Davis. McClellan Nuclear Research Center. 2019 Annual Report, dated July 6, 2020.	ML20188A338
University of California, Davis. McClellan Nuclear Research Center. 2020 Annual Report, dated June 22, 2021.	ML21175A333 (package)
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