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San Onofre Nuclear Generating Station Independent Spent Nuclear Fuel Storage Installation

Report period: October 2020

This report provides radiation data at the San Onofre Nuclear Generating Station (SONGS) Independent Spent Fuel Storage Installation (ISFSI). The information was gathered according to an agreement between SONGS and the California Department of Public Health Radiologic Health Branch (RHB).

Dry Storage at SONGS

The first used fuel assemblies were transferred from wet (pool) storage to the dry cask storage units in the TN-NUHOMS system in October 2003. In total, 1,187 fuel assemblies are stored in the NUHOMS system in 50 canisters. The Holtec HI-STORM UMAX dry storage system was constructed between April 2016 and the end of 2017, with the transferring of fuel assemblies taking place from January 2018 to August 2020. The Holtec system houses 73 canisters of spent nuclear fuel.

Radiation Monitoring

Radiation level measurements around the ISFSI were initiated before fuel was placed in the NUHOMS system to determine background levels. Radiation measurements using sensitive Thermoluminescent Dosimeters (TLDs) have been made at locations around the ISFSI since then and reported to the Nuclear Regulatory Commission in SONGS Annual Radiological Environmental Operating Reports. These reports (through 2015) are available at [U.S. NRC Radioactive Effluent and Environmental Reports](#), or in the NRC public Document System (ADAMS). Reports beginning in 2016 are available at [SONGS Environmental Monitoring](#).

Additional TLDs were placed around the Holtec ISFSI in 2016 as it was constructed and before operation and have been in place since the first fuel canister was placed in 2018. Gamma-sensitive radiation monitors were added in 2019 at three locations in the ISFSI area and one additional monitor in a control location. The data are summarized in tables with daily averages, maxima, and minima. Those data tables are attached, one for each of the four locations.

More information on radiation monitoring is available at [SONGS Dry Fuel Storage Radiation Monitoring](#).

Locations

There are three radiation monitors in the ISFSI at locations depicted on the image below:



A fourth radiation monitor, at a control location, is located at the edge of the parking lot north of the ISFSI such that it measures background radiation in an unaffected reference area similar to the ISFSI.



Low-Level Waste Shipments Offsite as Part of SONGS Dismantlement

SONGS is in the process of dismantlement with rail shipments of low-level radioactive waste periodically leaving the site for disposal.

There were no waste shipments offsite that impacted radiation measurements by the ISFSI Radiation Monitoring System during October 2020.

Other

There were no other relevant activities (i.e. temporary power outage, radiation monitor maintenance, etc.) during October 2020.

Table 1: Daily Results for October 2020 (in millirem per hour) for Location #1

Day	Average Dose Rate	Maximum Dose Rate	Minimum Dose Rate
1-Oct	0.024	0.030	0.018
2-Oct	0.024	0.033	0.017
3-Oct	0.024	0.031	0.018
4-Oct	0.024	0.030	0.018
5-Oct	0.024	0.033	0.018
6-Oct	0.024	0.030	0.018
7-Oct	0.024	0.033	0.018
8-Oct	0.023	0.031	0.018
9-Oct	0.023	0.029	0.017
10-Oct	0.024	0.032	0.017
11-Oct	0.024	0.031	0.017
12-Oct	0.024	0.031	0.017
13-Oct	0.024	0.030	0.019
14-Oct	0.024	0.030	0.018
15-Oct	0.024	0.030	0.018
16-Oct	0.024	0.030	0.018
17-Oct	0.023	0.031	0.018
18-Oct	0.024	0.033	0.018
19-Oct	0.024	0.031	0.017
20-Oct	0.023	0.031	0.017
21-Oct	0.023	0.030	0.017
22-Oct	0.024	0.030	0.018
23-Oct	0.023	0.031	0.016
24-Oct	0.023	0.032	0.018
25-Oct	0.023	0.030	0.017
26-Oct	0.024	0.033	0.017
27-Oct	0.024	0.032	0.018
28-Oct	0.023	0.032	0.018
29-Oct	0.024	0.030	0.018
30-Oct	0.024	0.031	0.018
31-Oct	0.024	0.030	0.019

Table 2: Daily Results for October 2020 (in millirem per hour) for Location #2

Day	Average Dose Rate	Maximum Dose Rate	Minimum Dose Rate
1-Oct	0.009	0.012	0.007
2-Oct	0.009	0.014	0.007
3-Oct	0.009	0.015	0.006
4-Oct	0.009	0.013	0.006
5-Oct	0.009	0.013	0.006
6-Oct	0.009	0.013	0.006
7-Oct	0.009	0.012	0.006
8-Oct	0.008	0.012	0.005
9-Oct	0.009	0.012	0.006
10-Oct	0.009	0.012	0.006
11-Oct	0.009	0.012	0.005
12-Oct	0.009	0.013	0.006
13-Oct	0.009	0.012	0.006
14-Oct	0.009	0.013	0.006
15-Oct	0.008	0.012	0.005
16-Oct	0.008	0.012	0.005
17-Oct	0.008	0.012	0.006
18-Oct	0.008	0.011	0.006
19-Oct	0.008	0.011	0.005
20-Oct	0.008	0.011	0.005
21-Oct	0.008	0.012	0.005
22-Oct	0.008	0.012	0.006
23-Oct	0.008	0.011	0.005
24-Oct	0.008	0.011	0.005
25-Oct	0.008	0.012	0.006
26-Oct	0.008	0.011	0.006
27-Oct	0.008	0.011	0.005
28-Oct	0.009	0.013	0.006
29-Oct	0.009	0.013	0.006
30-Oct	0.009	0.012	0.006
31-Oct	0.009	0.013	0.006

Table 3: Daily Results for October 2020 (in millirem per hour) for Location #3

Day	Average Dose Rate	Maximum Dose Rate	Minimum Dose Rate
1-Oct	0.015	0.022	0.011
2-Oct	0.015	0.021	0.010
3-Oct	0.015	0.021	0.011
4-Oct	0.015	0.021	0.011
5-Oct	0.015	0.020	0.011
6-Oct	0.015	0.019	0.011
7-Oct	0.015	0.020	0.011
8-Oct	0.015	0.019	0.011
9-Oct	0.015	0.021	0.011
10-Oct	0.015	0.021	0.011
11-Oct	0.015	0.020	0.011
12-Oct	0.015	0.021	0.011
13-Oct	0.015	0.019	0.011
14-Oct	0.015	0.020	0.011
15-Oct	0.015	0.021	0.011
16-Oct	0.015	0.021	0.011
17-Oct	0.015	0.020	0.011
18-Oct	0.015	0.021	0.011
19-Oct	0.015	0.021	0.010
20-Oct	0.015	0.021	0.011
21-Oct	0.015	0.020	0.010
22-Oct	0.014	0.019	0.010
23-Oct	0.014	0.022	0.011
24-Oct	0.014	0.020	0.011
25-Oct	0.014	0.019	0.010
26-Oct	0.014	0.020	0.011
27-Oct	0.014	0.020	0.010
28-Oct	0.015	0.020	0.011
29-Oct	0.015	0.020	0.011
30-Oct	0.015	0.021	0.010
31-Oct	0.015	0.021	0.011

Table 4: Daily Results for October 2020 (in millirem per hour) for Location #4 (Control)

Day	Average Dose Rate	Maximum Dose Rate	Minimum Dose Rate
1-Oct	0.007	0.010	0.004
2-Oct	0.007	0.010	0.004
3-Oct	0.007	0.010	0.003
4-Oct	0.006	0.009	0.004
5-Oct	0.007	0.010	0.004
6-Oct	0.007	0.010	0.004
7-Oct	0.007	0.010	0.004
8-Oct	0.006	0.012	0.004
9-Oct	0.006	0.009	0.004
10-Oct	0.006	0.009	0.004
11-Oct	0.006	0.009	0.003
12-Oct	0.007	0.011	0.004
13-Oct	0.007	0.010	0.004
14-Oct	0.007	0.011	0.004
15-Oct	0.007	0.009	0.004
16-Oct	0.006	0.009	0.004
17-Oct	0.006	0.010	0.004
18-Oct	0.006	0.010	0.004
19-Oct	0.007	0.010	0.004
20-Oct	0.007	0.010	0.005
21-Oct	0.007	0.010	0.004
22-Oct	0.006	0.010	0.004
23-Oct	0.007	0.010	0.004
24-Oct	0.006	0.010	0.004
25-Oct	0.006	0.010	0.004
26-Oct	0.007	0.010	0.004
27-Oct	0.007	0.010	0.005
28-Oct	0.007	0.010	0.004
29-Oct	0.007	0.010	0.004
30-Oct	0.006	0.010	0.004
31-Oct	0.006	0.010	0.004