



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

January 30, 2023

MEMORANDUM TO: Anthony Dimitriadis, Chief
Decommissioning, ISFSI and Reactor HP Branch
Division of Radiological Safety and Security
NRC Region I

Binoy Desai, Chief
Engineering Branch 3
Division of Reactor Safety
NRC Region II

David Hills, Chief
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Division of Radiological Safety and Security
NRC Region III

Greg Warnick, Chief
Decommissioning, ISFSI and Operating Reactor Branch
Division of Radiological Safety and Security
NRC Region IV

FROM: Kevin Hsueh, Chief */RA/*
Radiation Protection and Consequence Branch
Division of Risk Assessment
Office of Nuclear Reactor Regulation

SUBJECT: THREE-YEAR COLLECTIVE TOTAL EFFECTIVE DOSE
EQUIVALENT PER REACTOR-YEAR FOR 2019-2021
MONITORING YEARS

Enclosure 1 is provided for your use in dispositioning certain inspection findings within the Occupational Radiation Safety Cornerstone of the Reactor Oversight Process. The Nuclear Regulatory Commission's (NRC) Inspection Manual contains references to the Three-Year Rolling Average (TYRA) collective dose in Step 2 of Section IV of Inspection Manual Chapter (IMC) 0609, Appendix C, "Public Radiation Safety Significance Determination Process," dated August 19, 2008.

When dispositioning inspection findings in the As Low As is Reasonably Achievable (ALARA) area, IMC 0609, Appendix C instructs NRC staff to consider a licensee's overall performance in maintaining occupational doses ALARA. This consideration is intended to risk-inform NRC actions by directing potential follow-on inspection resources to those programs with the largest radiological challenges. The TYRA collective dose is a high-level indication of the radiological challenges encountered by an ALARA program.

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Power reactor licensees are included as one of the seven categories of NRC licensees that are required to report, per Title 10 of the *Code of Federal Regulations* (CFR 20.2206), the results of individual monitoring required by 10 CFR 20.1502. Licensees may voluntarily include additional data for individuals for whom monitoring was provided but not required by 10 CFR 20.1502. The data provided in Enclosure 1 was extracted from the Radiation Exposure Information and Reporting System the system the NRC uses to collect and store occupational exposure data. The data tables are shown in draft form because they are excerpts from the most current version (Volume 43) of NUREG-0713, "Occupational Radiation Exposure at Commercial Nuclear Power Reactors and Other Facilities," which will not be finalized until later in 2023. The TYRA is determined by summing the collective dose per reactor for the most recent year for which data is available and the previous 2 years and then dividing this sum by 3, representing the number of years considered in the calculation.

Enclosure:
As Stated

SUBJECT: THREE-YEAR COLLECTIVE TOTAL EFFECTIVE DOSE EQUIVALENT PER
REACTOR-YEAR FOR 2019-2021 MONITORING YEARS DATED: 1/30/2023

DISTRIBUTION:

PUBLIC

RidsNrrDraArcb Resource
DGarmon
JTomon
KHsueh

ADAMS Accession No.: ML23026A278

NRR-106

OFFICE	NRR/DRA/ARCB	BC: RES/DSA/RPB	BC: NRR/DRA/ARCB
NAME	DGarmon	JTomon (TBrock for)	KHsueh
DATE	12/28/2022	12/28/2022	1/27/2023

OFFICIAL RECORD COPY

	Plant Name	Three-Year Coll. TEDE per Reactor Year 2019-2021	Percent Change From 2018-2020	2018-2020 Quartile (if changed)
1st Quartile	COOPER STATION	41.125	-49% ▼	2
	HATCH 1,2	52.886	-12% ▼	-
	FITZPATRICK	65.632	-51% ▼	4
	LIMERICK 1,2	66.297	1% ▲	-
	SUSQUEHANNA 1,2	69.701	-1% ▼	-
2nd Quartile	DRESDEN 2,3	73.546	-1% ▼	1
	PEACH BOTTOM 2,3	78.413	-9% ▼	-
	QUAD CITIES 1,2	87.430	-4% ▼	-
	NINE MILE POINT 1,2	88.993	-33% ▼	4
	BRUNSWICK 1,2	93.430	-1% ▼	3
3rd Quartile	CLINTON	93.628	12% ▲	2
	MONTICELLO	94.463	58% ▲	1
	GRAND GULF	104.517	-27% ▼	4
	HOPE CREEK 1	109.004	-3% ▼	-
	BROWNS FERRY 1,2,3	110.858	-16% ▼	-
4th Quartile	RIVER BEND 1	167.266	38% ▲	3
	COLUMBIA GENERATING	173.985	107% ▲	2
	LASALLE 1,2	192.947	38% ▲	-
	PERRY	197.295	63% ▲	3
	FERMI 2	229.781	-28% ▼	-
	Average per Reactor-Year	103.760	-2% ▼	

← Average 103.760

**THREE-YEAR COLLECTIVE TOTAL EFFECTIVE DOSE EQUIVALENT
PER REACTOR-YEAR FOR BOILING WATER REACTORS 2019-2021**

Enclosure

	Plant Name	Three-Year Coll. TEDE per Reactor Year 2019-2021	Percent Change From 2018-2020	2018-2020 Quartile (if changed)
1st Quartile	PALO VERDE 1,2,3	12.603	-3% ▼	-
	OCONEE 1,2,3	13.910	-17% ▼	-
	PRAIRIE ISLAND 1,2	15.156	10% ▲	-
	DIABLO CANYON 1,2	15.767	-17% ▼	-
	BYRON 1,2	18.731	-3% ▼	-
	HARRIS 1	18.767	-19% ▼	-
	ROBINSON 2	19.077	-49% ▼	4
	CALLAWAY 1	20.344	0% ▲	-
	DAVIS-BESSE 1	20.481	-41% ▼	3
2nd Quartile	SUMMER 1	21.084	-25% ▼	-
	BRAIDWOOD 1,2	21.925	20% ▲	1
	SEABROOK	23.223	11% ▲	1
	COOK 1,2	24.512	-4% ▼	-
	FARLEY 1,2	25.562	5% ▲	-
	CALVERT CLIFFS 1,2	25.767	-9% ▼	3
	SOUTH TEXAS 1,2	26.172	-10% ▼	3
	BEAVER VALLEY 1,2	26.293	14% ▲	1
	GINNA	27.267	7% ▲	-
3rd Quartile	NORTH ANNA 1,2	29.785	-10% ▼	-
	MILLSTONE 2,3	30.070	-8% ▼	-
	MCGUIRE 1,2	30.638	12% ▲	2
	SURRY 1,2	32.207	-8% ▼	-
	VOGTLE 1,2	33.211	8% ▲	-
	WATTS BAR 1,2	34.748	31% ▲	2
	WATERFORD 3	36.290	1% ▲	4
4th Quartile	CATAWBA 1,2	36.652	13% ▲	-
	ST. LUCIE 1,2	36.922	-2% ▼	-
	POINT BEACH 1,2	37.232	14% ▲	3
	COMANCHE PEAK 1,2	40.627	68% ▲	2
	SEQUOYAH 1,2	41.609	-2% ▼	-
	WOLF CREEK 1	41.919	5% ▲	-
	TURKEY POINT 3,4	42.956	18% ▲	-
	ARKANSAS 1,2	45.910	-1% ▼	-
	SALEM 1,2	54.807	5% ▲	-
PALISADES	84.365	-44% ▼	-	
Average per Reactor-Year		29.788	-36% ▼	

← Average 29.788

NOTE: Data does not include Indian Point 2, which closed on April, 2020 and Indian Point 3, which closed on April, 2021.

THREE-YEAR COLLECTIVE TOTAL EFFECTIVE DOSE EQUIVALENT PER REACTOR-YEAR FOR PRESSURIZED WATER REACTORS 2019-2021