July 13, 2018

MEMORANDUM TO: Raymond Powell, Chief
Decommissioning, ISFSI and Reactor HP Branch
Division of of Nuclear Materials Safety
Region I

Brian Bonser, Chief
Plant Support Branch 1
Division of Reactor Safety
Region II

Hironori Peterson, Chief
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FROM: Kevin Hsueh, Chief ***/RA/***
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Division of Risk Assessment
Office of Nuclear Reactor Regulation

SUBJECT: THREE-YEAR COLLECTIVE TOTAL EFFECTIVE DOSE EQUIVALENT PER REACTOR-YEAR FOR 2015-2017 MONITORING YEARS

Enclosure 1 is provided for your use in planning inspections and dispositioning inspection findings. The Nuclear Regulatory Commission's (NRC) Inspection Manual contains references to Three Year Rolling Average (TYRA) collective dose in the resource estimate section of Inspection Procedure (IP) 71124.02, "Occupational ALARA Planning and Controls," dated December 21, 2017, and in Section IV of Inspection Manual Chapter (IMC) 0609, Appendix C, "Public Radiation Safety Significance Determination Process," dated February 12, 2008.

IP 71124.02 directs inspection resources to be applied using a graded approach based on plant ranking by TYRA collective dose. The plants in the first quartile are usually assigned the lowest number of inspection hours, whereas the plants in the fourth quartile are usually assigned the highest number of inspection hours. Plants in the middle two quartiles typically receive the average number of inspection hours allowed by IP 71124.02. However, NRC inspection staff is allowed to adjust inspection hours as necessary to fulfill the objectives of the IP.

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

Power reactor licensees are included as one of the seven categories of NRC licensees that are required by 10 CFR 20.2206 to report the results of individual monitoring that is required by 10 CFR 20.1502. Licensees may voluntarily include additional data for individuals for whom monitoring was provided but not required. The data provided in Enclosure 1 was extracted from the Radiation Exposure Information and Reporting System (REIRS)—the system the NRC uses to collect and store occupational exposure data. The TYRA is determined by summing the collective dose per reactor for the current year and the previous 2 years and then dividing this sum by 3, which is the number of years considered.

Enclosure
Three-Year Collective Total

SUBJECT: THREE-YEAR COLLECTIVE TOTAL EFFECTIVE DOSE EQUIVALENT PER REACTOR-YEAR FOR 2015-2017 MONITORING YEARS, Memo dated, July 13, 2018

DISTRIBUTION:
RidsNrrDraArcb Resource
R1DNMSMAIL Resource

ADAMS Accession **No. ML18165A078**

OFFICE	NRR/DRA/ARCB	BC: RES/DSA/RPB	BC: NRR/DRA/ARCB
NAME	DGarmon	RTadesse	KHsueh
DATE	6/ 28 /2018	6/ 14 /2018	7/ 13 /2018

OFFICIAL RECORD COPY

	Plant Name	Three Year Coll. TEDE per Reactor Year 2015-2017 (person-rem)	Percent Change From 2014-2016	2014-2016 Quartile (if changed)
1st Quartile	DUANE ARNOLD	49.463	-41% ▼	2
	OYSTER CREEK	57.941	-42% ▼	2
	DRESDEN 2,3	68.326	3% ▲	-
	FITZPATRICK	70.428	14% ▲	-
	LIMERICK 1,2	72.554	12% ▲	-
	QUAD CITIES 1,2	80.983	4% ▲	2
2nd Quartile	HATCH 1,2	81.854	-15% ▼	-
	COOPER STATION	84.448	-41% ▼	4
	GRAND GULF	86.749	-35% ▼	3
	MONTICELLO	91.473	42% ▲	1
	NINE MILE POINT 1,2	93.054	-18% ▼	3
	CLINTON	95.144	92% ▲	1
3rd Quartile	SUSQUEHANNA 1,2	101.493	-7% ▼	2
	BRUNSWICK 1,2	102.303	-7% ▼	-
	HOPE CREEK 1	113.888	-1% ▼	-
	BROWNS FERRY 1,2,3	115.857	-4% ▼	-
	PEACH BOTTOM 2,3	132.605	-23% ▼	4
4th Quartile	PILGRIM	141.950	42% ▲	2
	RIVER BEND 1	157.546	119% ▲	1
	COLUMBIA GENERATING	165.405	42% ▲	3
	FERMI 2	184.899	13% ▲	-
	LASALLE 1,2	235.173	17% ▲	-
	PERRY	250.295	48% ▲	-
	Average per Reactor-Year	**112.761**	**2%** ▲	

Average 112.761

THREE-YEAR COLLECTIVE TOTAL EFFECTIVE DOSE EQUIVALENT PER REACTOR-YEAR FOR BOILING WATER REACTORS 2015-2017

ENCLOSURE 1

	Plant Name	Three-Year Coll. TEDE per Reactor Year 2015-2017 (person-rem)	Percent Change From 2014-2016	2014-2016 Quartile (if changed)
1st Quartile	OCONEE 1,2,3	17.750	-31% ▼	-
	PALO VERDE 1,2,3	19.631	-3% ▼	-
	DIABLO CANYON 1,2	23.815	-12% ▼	-
	GINNA	24.073	-14% ▼	-
	PRAIRIE ISLAND 1,2	24.140	-20% ▼	2
	FARLEY 1,2	24.522	-4% ▼	-
	CALLAWAY 1	24.537	-15% ▼	-
	BRAIDWOOD 1,2	28.472	27% ▲	-
	SOUTH TEXAS 1,2	28.643	14% ▲	-
	CALVERT CLIFFS 1,2	30.133	-7% ▼	2
2nd Quartile	COOK 1,2	30.257	2% ▲	1
	BYRON 1,2	30.799	4% ▲	-
	POINT BEACH 1,2	32.041	-17% ▼	3
	BEAVER VALLEY 1,2	32.177	-5% ▼	-
	VOGTLE 1,2	33.266	-28% ▼	3
	COMANCHE PEAK 1,2	33.422	-8% ▼	-
	HARRIS	34.024	-1% ▼	-
	CATAWBA 1,2	34.502	-8% ▼	-
	NORTH ANNA 1,2	34.677	-11% ▼	-
3rd Quartile	WATTS BAR 1,2	36.120	12% ▲	2
	INDIAN POINT 2,3	39.354	-14% ▼	-
	SUMMER 1	39.376	-34% ▼	4
	ROBINSON 2	39.605	34% ▲	1
	MILLSTONE 2,3	40.111	-17% ▼	4
	DAVIS-BESSE	40.363	-62% ▼	4
	SEABROOK	42.305	-8% ▼	-
	WATERFORD 3	43.506	-6% ▼	-
	SALEM 1,2	43.710	11% ▲	3
4th Quartile	TURKEY POINT 3,4	43.932	-2% ▼	3
	MCGUIRE 1,2	44.107	4% ▲	3
	SURRY 1,2	47.571	0% ▲	-
	SEQUOYAH 1,2	48.298	-9% ▼	-
	ARKANSAS 1,2	55.723	5% ▲	-
	ST. LUCIE 1,2	55.973	-13% ▼	-
	WOLF CREEK 1	56.291	-12% ▼	-
	THREE MILE ISLAND 1	90.310	35% ▲	-
	PALISADES	130.165	-46% ▼	-
	Average per Reactor-Year	**37.177**	**-12% ▼**	

Average 37.177

THREE-YEAR COLLECTIVE TOTAL EFFECTIVE DOSE EQUIVALENT PER REACTOR-YEAR FOR PRESSURIZED WATER REACTORS 2015-2017