

Appendix 4.13 Fixed Plant Noise Calculation (A16 Station)

NAP	Plant Item	Direction Facing	Distance , m ⁽¹⁾	Correction for line of sight ⁽²⁾ , dB(A)	Distance Correction of Point Source, dB(A)	Façade Correction, dB(A)	Day / Evening Period (0700-2300)			Night-time Period (2300-0700)		
							Max. allowable SWL, dB(A)	Predicted SPL, dB(A)	Criterion, dB(A)	Max. allowable SWL, dB(A)	Total SPL, dB(A)	Criterion, dB(A)
TE1	East Façade of A16 Station	East	119	-10	-50	3	75	18	57	69	12	50
	West Façade of A16 Station	West	83	0	-46	3	85	42		79	36	
	East Façade of Cooling Tower Plant Room	East	348	-10	-59	3	69	>300m		62	>300m	
	West Façade of Cooling Tower Plant Room	West	341	0	-59	3	75	>300m		70	>300m	
	Feeder Station (FS-01)	-	148	0	-51	3	70	22		65	16.594/6569	
Total SPL:							42		Total SPL:	36		

NAP	Plant Item	Direction Facing	Distance , m ⁽¹⁾	Correction for line of sight ⁽²⁾ , dB(A)	Distance Correction of Point Source, dB(A)	Façade Correction, dB(A)	Day / Evening Period (0700-2300)			Night-time Period (2300-0700)		
							Max. allowable SWL, dB(A)	Predicted SPL, dB(A)	Criterion, dB(A)	Max. allowable SWL, dB(A)	Total SPL, dB(A)	Criterion, dB(A)
A16PH1	East Façade of A16 Station	East	140	0	-51	3	75	27	57	69	21	50
	West Façade of A16 Station	West	154	-10	-52	3	85	26		79	20	
	East Façade of Cooling Tower Plant Room	East	108	0	-49	3	69	23		62	16	
	West Façade of Cooling Tower Plant Room	West	115	-10	-49	3	75	19		70	14	
	Feeder Station (FS-01)	-	468	0	-61	3	70	>300m		65	>300m	
Total SPL:							31		Total SPL:	25		

NAP	Plant Item	Direction Facing	Distance , m ⁽¹⁾	Correction for line of sight ⁽²⁾ , dB(A)	Distance Correction of Point Source, dB(A)	Façade Correction, dB(A)	Day / Evening Period (0700-2300)			Night-time Period (2300-0700)		
							Max. allowable SWL, dB(A)	Predicted SPL, dB(A)	Criterion, dB(A)	Max. allowable SWL, dB(A)	Total SPL, dB(A)	Criterion, dB(A)
A16PH2	East Façade of A16 Station	East	88	0	-47	3	75	31	57	69	25	50
	West Façade of A16 Station	West	100	-10	-48	3	85	30		79	24	
	East Façade of Cooling Tower Plant Room	East	56	0	-43	3	69	29		62	22	
	West Façade of Cooling Tower Plant Room	West	62	-10	-44	3	75	24		70	19	
	Feeder Station (FS-01)	-	421	0	-60	3	70	>300m		65	>300m	
Total SPL:							35		Total SPL:	29		

NAP	Plant Item	Direction Facing	Distance , m ⁽¹⁾	Correction for line of sight ⁽²⁾ , dB(A)	Distance Correction of Point Source, dB(A)	Façade Correction, dB(A)	Day / Evening Period (0700-2300)			Night-time Period (2300-0700)		
							Max. allowable SWL, dB(A)	Predicted SPL, dB(A)	Criterion, dB(A)	Max. allowable SWL, dB(A)	Total SPL, dB(A)	Criterion, dB(A)
A16PH3	East Façade of A16 Station	East	9	0	-27	3	75	51	57	69	45	50
	West Façade of A16 Station	West	46	-10	-41	3	85	37		79	31	
	East Façade of Cooling Tower Plant Room	East	69	0	-45	3	69	27		62	20	
	West Façade of Cooling Tower Plant Room	West	75	-10	-46	3	75	22		70	17	
	Feeder Station (FS-01)	-	265	0	-56	3	70	17		65	12	
Total SPL:							51		Total SPL:	45		

NAP	Plant Item	Direction Facing	Distance , m ⁽¹⁾	Correction for line of sight ⁽²⁾ , dB(A)	Distance Correction of Point Source, dB(A)	Façade Correction, dB(A)	Day / Evening Period (0700-2300)			Night-time Period (2300-0700)		
							Max. allowable SWL, dB(A)	Predicted SPL, dB(A)	Criterion, dB(A)	Max. allowable SWL, dB(A)	Total SPL, dB(A)	Criterion, dB(A)
A16PH4	East Façade of A16 Station	East	12	0	-30	3	75	48	57	69	42	50
	West Façade of A16 Station	West	50	-10	-42	3	85	36		79	30	
	East Façade of Cooling Tower Plant Room	East	169	0	-53	3	69	19		62	12	
	West Façade of Cooling Tower Plant Room	West	172	-10	-53	3	75	15		70	10	
	Feeder Station (FS-01)	-	164	0	-52	3	70	21		65	16	
Total SPL:							49		Total SPL:	43		

NAP	Plant Item	Direction Facing	Distance , m ⁽¹⁾	Correction for line of sight ⁽²⁾ , dB(A)	Distance Correction of Point Source, dB(A)	Façade Correction, dB(A)	Day / Evening Period (0700-2300)			Night-time Period (2300-0700)		
							Max. allowable SWL, dB(A)	Predicted SPL, dB(A)	Criterion, dB(A)	Max. allowable SWL, dB(A)	Total SPL, dB(A)	Criterion, dB(A)
A16PH4a	East Façade of A16 Station	East	12	0	-30	3	75	48	57	69	42	50
	West Façade of A16 Station	West	50	-10	-42	3	85	36		79	30	
	East Façade of Cooling Tower Plant Room	East	169	0	-53	3	69	19		62	12	
	West Façade of Cooling Tower Plant Room	West	172	-10	-53	3	75	15		70	10	
	Feeder Station (FS-01)	-	164	0	-52	3	70	21		65	16	
Total SPL:							49		Total SPL:	43		

NAP	Plant Item	Direction Facing	Distance , m ⁽¹⁾	Correction for line of sight ⁽²⁾ , dB(A)	Distance Correction of Point Source, dB(A)	Façade Correction, dB(A)	Day / Evening Period (0700-2300)			Night-time Period (2300-0700)		
							Max. allowable SWL, dB(A)	Predicted SPL, dB(A)	Criterion, dB(A)	Max. allowable SWL, dB(A)	Total SPL, dB(A)	Criterion, dB(A)
A16PH5	East Façade of A16 Station	East	31	0	-38	3	75	40	57	69	34	53
	West Façade of A16 Station	West	63	-10	-44	3	85	34		79	28	
	East Façade of Cooling Tower Plant Room	East	322	0	-58	3	69	>300m		62	>300m	
	West Façade of Cooling Tower Plant Room	West	325	-10	-58	3	75	>300m		70	>300m	
	Feeder Station (FS-01)	-	16	0	-32	3	70	41		65	36	
Total SPL:							44		Total SPL:	39		

NAP	Plant Item	Direction Facing	Distance , m ⁽¹⁾	Correction for line of sight ⁽²⁾ , dB(A)	Distance Correction of Point Source, dB(A)	Façade Correction, dB(A)	Day / Evening Period (0700-2300)			Night-time Period (2300-0700)		
							Max. allowable SWL, dB(A)	Predicted SPL, dB(A)	Criterion, dB(A)	Max. allowable SWL, dB(A)	Total SPL, dB(A)	Criterion, dB(A)
A16PH5a	East Façade of A16 Station	East	31	0	-38	3	75	40	57	69	34	50
	West Façade of A16 Station	West	63	-10	-44	3	85	34		79	28	
	East Façade of Cooling Tower Plant Room	East	322	0	-58	3	69	>300m		62	>300m	
	West Façade of Cooling Tower Plant Room	West	325	-10	-58	3	75	>300m		70	>300m	
	Feeder Station (FS-01)	-	16	0	-32	3	70	41		65	36	
Total SPL:							44		Total SPL:	39		

NAP	Plant Item	Direction Facing	Distance , m ⁽¹⁾	Correction for line of sight ⁽²⁾ , dB(A)	Distance Correction of Point Source, dB(A)	Façade Correction, dB(A)	Day / Evening Period (0700-2300)			Night-time Period (2300-0700)		
							Max. allowable SWL, dB(A)	Predicted SPL, dB(A)	Criterion, dB(A)	Max. allowable SWL, dB(A)	Total SPL, dB(A)	Criterion, dB(A)
A16PH6	East Façade of A16 Station	East	7	0	-25	3	75	53	57	69	47	50
	West Façade of A16 Station	West	44	-10	-41	3	85	37		79	31	
	East Façade of Cooling Tower Plant Room	East	3	0	-18	3	69	54		62	47	
	West Façade of Cooling Tower Plant Room	West	28	-10	-37	3	75	31		70	26	
	Feeder Station (FS-01)	-	330	0	-58	3	70	>300m		65	>300m	
Total SPL:							57		Total SPL:	50		

NAP	Plant Item	Direction Facing	Distance , m ⁽¹⁾	Correction for line of sight ⁽²⁾ , dB(A)	Distance Correction of Point Source, dB(A)	Façade Correction, dB(A)	Day / Evening Period (0700-2300)			Night-time Period (2300-0700)		
							Max. allowable SWL, dB(A)	Predicted SPL, dB(A)	Criterion, dB(A)	Max. allowable SWL, dB(A)	Total SPL, dB(A)	Criterion, dB(A)
A16PH10	East Façade of A16 Station	East	10	-5	-28	3	75	45	57	69	39	50
	West Façade of A16 Station	West	10	-10	-28	3	85	50		79	44	
	East Façade of Cooling Tower Plant Room	East	11	-5	-29	3	69	38		62	31	
	West Façade of Cooling Tower Plant Room	West	16	-10	-32	3	75	36		70	31	
	Feeder Station (FS-01)	-	328	0	-58	3	70	>300m		65	>300m	
Total SPL:							52		Total SPL:	46		

NAP	Plant Item	Direction Facing	Distance , m ⁽¹⁾	Correction for line of sight ⁽²⁾ , dB(A)	Distance Correction of Point Source, dB(A)	Façade Correction, dB(A)	Day / Evening Period (0700-2300)			Night-time Period (2300-0700)		
							Max. allowable SWL, dB(A)	Predicted SPL, dB(A)	Criterion, dB(A)	Max. allowable SWL, dB(A)	Total SPL, dB(A)	Criterion, dB(A)
A16PH11	East Façade of A16 Station	East	10	-10	-28	3	75	40	57	69	34	50
	West Façade of A16 Station	West	10	-5	-28	3	85	55		79	49	
	East Façade of Cooling Tower Plant Room	East	35	-10	-39	3	69	23		62	16	
	West Façade of Cooling Tower Plant Room	West	42	-5	-30	3	75	43		70	38	
	Feeder Station (FS-01)	-	333	0	-58	3	70	>300m		65	>300m	
Total SPL:							55		Total SPL:	49		

NAP	Plant Item	Direction Facing	Distance , m ⁽¹⁾	Correction for line of sight ⁽²⁾ , dB(A)	Distance Correction of Point Source, dB(A)	Façade Correction, dB(A)	Day / Evening Period (0700-2300)			Night-time Period (2300-0700)		
							Max. allowable SWL, dB(A)	Predicted SPL, dB(A)	Criterion, dB(A)	Max. allowable SWL, dB(A)	Total SPL, dB(A)	Criterion, dB(A)
A16PH12	East Façade of A16 Station	East	10	-5	-28	3	75	45	57	69	39	50
	West Façade of A16 Station	West	10	-10	-28	3	85	50		79	44	
	East Façade of Cooling Tower Plant Room	East	222	-5	-46	3	69	12		62	5	
	West Façade of Cooling Tower Plant Room	West	223	-10	-55	3	75	13		70	8	
	Feeder Station (FS-01)	-	116	0	-49	3	70	24		65	19	
Total SPL:							51		Total SPL:	45		

Appendix 4.13 Fixed Plant Noise Calculation (A16 Station)

NAP	Plant item	Direction Facing	Distance , m ^[1]	Correction for line of sight ^[2] , dB(A)	Distance Correction of Point Source, dB(A)	Façade Correction, dB(A)	Day / Evening Period (0700-2300)			Night-time Period (2300-0700)		
							Max. allowable SWL, dB(A)	Predicted SPL, dB(A)	Criterion, dB(A)	Max. allowable SWL, dB(A)	Total SPL, dB(A)	Criterion, dB(A)
A16PH13	East Façade of A16 Station	East	10	-10	-28	3	75	40	57	69	34	
	West Façade of A16 Station	West	10	-5	-28	3	85	55		79	49	
	East Façade of Cooling Tower Plant Room	East	223	-10	-55	3	69	7		62	0	
	West Façade of Cooling Tower Plant Room	West	221	-5	-55	3	75	18		70	13	
	Feeder Station (FS-01)	-	124	0	-50	3	70	23		65	18	
							Total SPL:	55		Total SPL:	49	53

NAP	Plant item	Direction Facing	Distance , m ^[1]	Correction for line of sight ^[2] , dB(A)	Distance Correction of Point Source, dB(A)	Façade Correction, dB(A)	Day / Evening Period (0700-2300)			Night-time Period (2300-0700)		
							Max. allowable SWL, dB(A)	Predicted SPL, dB(A)	Criterion, dB(A)	Max. allowable SWL, dB(A)	Total SPL, dB(A)	Criterion, dB(A)
A16PH14	East Façade of A16 Station	East	46	0	-41	3	75	37	57	69	31	
	West Façade of A16 Station	West	78	-10	-46	3	85	32		79	26	
	East Façade of Cooling Tower Plant Room	East	330	0	-58	3	69	>300m		62	>300m	
	West Façade of Cooling Tower Plant Room	West	334	-10	-58	3	75	>300m		70	>300m	
	Feeder Station (FS-01)	-	4	0	-20	3	70	53		65	48	
							Total SPL:	53		Total SPL:	48	53

NAP	Plant item	Direction Facing	Distance , m ^[1]	Correction for line of sight ^[2] , dB(A)	Distance Correction of Point Source, dB(A)	Façade Correction, dB(A)	Day / Evening Period (0700-2300)			Night-time Period (2300-0700)		
							Max. allowable SWL, dB(A)	Predicted SPL, dB(A)	Criterion, dB(A)	Max. allowable SWL, dB(A)	Total SPL, dB(A)	Criterion, dB(A)
A16PH15	East Façade of A16 Station	East	32	0	-38	3	75	40	57	69	34	
	West Façade of A16 Station	West	53	-10	-42	3	85	36		79	30	
	East Façade of Cooling Tower Plant Room	East	3	0	-38	3	69	18		62	47	
	West Façade of Cooling Tower Plant Room	West	27	-10	-37	3	75	31		70	26	
	Feeder Station (FS-01)	-	365	0	-59	3	70	>300m		65	>300m	
							Total SPL:	55		Total SPL:	48	50

NAP	Plant item	Direction Facing	Distance , m ^[1]	Correction for line of sight ^[2] , dB(A)	Distance Correction of Point Source, dB(A)	Façade Correction, dB(A)	Day / Evening Period (0700-2300)			Night-time Period (2300-0700)		
							Max. allowable SWL, dB(A)	Predicted SPL, dB(A)	Criterion, dB(A)	Max. allowable SWL, dB(A)	Total SPL, dB(A)	Criterion, dB(A)
HSNPS	East Façade of A16 Station	East	161	0	-52	3	75	26	59	-	-	
	West Façade of A16 Station	West	200	-10	-54	3	85	24		-	-	
	East Façade of Cooling Tower Plant Room	East	354	0	-59	3	69	>300m		-	-	
	West Façade of Cooling Tower Plant Room	West	366	-10	-59	3	75	>300m		-	-	
	Feeder Station (FS-01)	-	125	0	-50	3	70	23		-	-	
							Total SPL:	29		Total SPL:	-	-

Remark: No noise sensitive use is anticipated during night-time period.

NAP	Plant item	Direction Facing	Distance , m ^[1]	Correction for line of sight ^[2] , dB(A)	Distance Correction of Point Source, dB(A)	Façade Correction, dB(A)	Day / Evening Period (0700-2300)			Night-time Period (2300-0700)		
							Max. allowable SWL, dB(A)	Predicted SPL, dB(A)	Criterion, dB(A)	Max. allowable SWL, dB(A)	Total SPL, dB(A)	Criterion, dB(A)
OH1	East Façade of A16 Station	East	183	0	-53	3	75	25	59	69	19	
	West Façade of A16 Station	West	220	-10	-54	3	85	23		79	17	
	East Façade of Cooling Tower Plant Room	East	258	0	-56	3	69	16		62	9	
	West Façade of Cooling Tower Plant Room	West	274	-10	-57	3	75	11		70	6	
	Feeder Station (FS-01)	-	210	0	-54	3	70	19		65	14	
							Total SPL:	28		Total SPL:	22	50

NAP	Plant item	Direction Facing	Distance , m ^[1]	Correction for line of sight ^[2] , dB(A)	Distance Correction of Point Source, dB(A)	Façade Correction, dB(A)	Day / Evening Period (0700-2300)			Night-time Period (2300-0700)		
							Max. allowable SWL, dB(A)	Predicted SPL, dB(A)	Criterion, dB(A)	Max. allowable SWL, dB(A)	Total SPL, dB(A)	Criterion, dB(A)
LMO1	East Façade of A16 Station	East	167	-10	-52	3	75	16	57	69	10	
	West Façade of A16 Station	West	130	0	-50	3	85	38		79	32	
	East Façade of Cooling Tower Plant Room	East	214	-10	-55	3	69	7		62	0	
	West Façade of Cooling Tower Plant Room	West	195	0	-54	3	75	24		70	19	
	Feeder Station (FS-01)	-	282	0	-57	3	70	16		65	11	
							Total SPL:	38		Total SPL:	32	50

NAP	Plant item	Direction Facing	Distance , m ^[1]	Correction for line of sight ^[2] , dB(A)	Distance Correction of Point Source, dB(A)	Façade Correction, dB(A)	Day / Evening Period (0700-2300)			Night-time Period (2300-0700)		
							Max. allowable SWL, dB(A)	Predicted SPL, dB(A)	Criterion, dB(A)	Max. allowable SWL, dB(A)	Total SPL, dB(A)	Criterion, dB(A)
LMO2	East Façade of A16 Station	East	167	-10	-52	3	75	16	57	69	10	
	West Façade of A16 Station	West	129	0	-50	3	85	38		79	32	
	East Façade of Cooling Tower Plant Room	East	174	-10	-53	3	69	9		62	2	
	West Façade of Cooling Tower Plant Room	West	150	0	-52	3	75	26		70	21	
	Feeder Station (FS-01)	-	352	0	-59	3	70	>300m		65	>300m	
							Total SPL:	38		Total SPL:	32	50

NAP	Plant item	Direction Facing	Distance , m ^[1]	Correction for line of sight ^[2] , dB(A)	Distance Correction of Point Source, dB(A)	Façade Correction, dB(A)	Day / Evening Period (0700-2300)			Night-time Period (2300-0700)		
							Max. allowable SWL, dB(A)	Predicted SPL, dB(A)	Criterion, dB(A)	Max. allowable SWL, dB(A)	Total SPL, dB(A)	Criterion, dB(A)
LMO3	East Façade of A16 Station	East	160	-10	-52	3	75	16	57	69	10	
	West Façade of A16 Station	West	120	0	-50	3	85	38		79	32	
	East Façade of Cooling Tower Plant Room	East	162	-10	-52	3	69	10		62	3	
	West Façade of Cooling Tower Plant Room	West	137	0	-51	3	75	27		70	22	
	Feeder Station (FS-01)	-	399	0	-60	3	70	>300m		65	>300m	
							Total SPL:	39		Total SPL:	33	50

NAP	Plant item	Direction Facing	Distance , m ^[1]	Correction for line of sight ^[2] , dB(A)	Distance Correction of Point Source, dB(A)	Façade Correction, dB(A)	Day / Evening Period (0700-2300)			Night-time Period (2300-0700)		
							Max. allowable SWL, dB(A)	Predicted SPL, dB(A)	Criterion, dB(A)	Max. allowable SWL, dB(A)	Total SPL, dB(A)	Criterion, dB(A)
GG1	East Façade of A16 Station	East	166	-10	-52	3	75	16	57	69	10	
	West Façade of A16 Station	West	136	0	-51	3	85	37		79	31	
	East Façade of Cooling Tower Plant Room	East	153	-10	-52	3	69	10		62	3	
	West Façade of Cooling Tower Plant Room	West	130	0	-50	3	75	28		70	23	
	Feeder Station (FS-01)	-	455	0	-61	3	70	>300m		65	>300m	
							Total SPL:	38		Total SPL:	32	50

NAP	Plant item	Direction Facing	Distance , m ^[1]	Correction for line of sight ^[2] , dB(A)	Distance Correction of Point Source, dB(A)	Façade Correction, dB(A)	Day / Evening Period (0700-2300)			Night-time Period (2300-0700)		
							Max. allowable SWL, dB(A)	Predicted SPL, dB(A)	Criterion, dB(A)	Max. allowable SWL, dB(A)	Total SPL, dB(A)	Criterion, dB(A)
GG2	East Façade of A16 Station	East	210	-10	-54	3	75	14	57	69	8	
	West Façade of A16 Station	West	188	0	-53	3	85	35		79	29	
	East Façade of Cooling Tower Plant Room	East	189	-10	-54	3	69	8		62	1	
	West Façade of Cooling Tower Plant Room	West	170	0	-53	3	75	25		70	20	
	Feeder Station (FS-01)	-	520	0	-62	3	70	>300m		65	>300m	
							Total SPL:	35		Total SPL:	29	50

Remarks:

[1] As a conservative approach, only horizontal distance has been considered in the calculation of distance correction. For the planned NAPs atop A16 station (i.e. A16PH10 to A16PH13), only vertical distance has been considered in the calculation of distance correction for the separation between the NAP and fixed plant sources at A16 station. As confirmed by MTRCL, the vertical separation between the noise assessment points at 1/F of the planned property development atop A16 station and fixed plant sources from A16 station would not be less than 10m.

[2] A negative correction of 10 dB(A) has been adopted to the direction facing of the lower totally screened by buildings and negative correction of 5 dB(A) for NSR do not have direct line of sight to the lower.

[3] As confirmed by MTRCL, the minimum horizontal distance separation between the feeder station and the nearest NAP (i.e. A16PH14) is 4m.