
 Eskom	Nuclear Operating Unit Workforce Planning	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-123782330	Rev	2
		Effective Date	February 2020		
		Review Date	February 2023		

NUCLEAR OPERATING UNIT

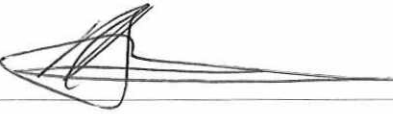
WORKFORCE PLAN


2020-2030

SUPPORT (HR Business Partner)

Supported by:	Shirley Mabika
Designation:	Human Resources Operations Manager
Signature:	
Date:	29/03/2021


BUSINESS OWNER (Chief Nuclear Officer)

Signed by:	Riedewaan Bakardien
Designation:	Chief Nuclear Officer <i>Document is a work in progress.</i>
Signature:	
Date:	30/03/2021

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NUCLEAR OPERATING UNIT

WORKFORCE PLAN


2020-2030

SUPPORT (HR Business Partner)	
Supported by:	Shirley Mabika
Designation:	Human Resources Operations Manager
Signature:	
Date:	
BUSINESS OWNER (Chief Nuclear Officer)	
Signed by:	Riedewaan Bakardien
Designation:	Chief Nuclear Officer
Signature:	
Date:	

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1. OVERVIEW


- 1.1 The Workforce planning document outlines the strategic alignment of human resources with the business direction of the organization, an ongoing process of analyzing the current workforce, determining future workforce needs, identifying the gap between the present and the future, and implementing solutions and or strategies that enable accomplishment of a vision, mission, goals and objectives.

2. OBJECTIVE

- 2.1 To develop a Nuclear Operating Unit workforce plan for a period of 10 years from 2020 to 2030, in order to understand the workforce requirements for the NOU currently and beyond the Koeberg life expansion.
- 2.2 Outline the required number of resources and the resourcing strategy for Nuclear Workforce plan for 2020 to 2030 on annual basis.

3. BACKGROUND AND APPROACH

- 3.1 The report sets out Nuclear Operating Unit requirements for a period of 10 years from 2020 to 2030. Workforce planning involves analysing and forecasting workforce or talent required to proactively execute the business strategy, enabling the business to identify, develop, and sustain the workforce.
- 3.2 The development of the workforce plan has been a collaborative effort between Human Resource Business Partners and line representatives within NOU.
- 3.3 The process was executed by workshops and meetings with departmental business unit managers, facilitated by HRBP's with support from CoE.
- 3.4 Information gathered and assumptions were used in modelling the workforce plan. The required workforce was based on the preliminary outcome of the workshops held with Nuclear leadership – detailed analysis of structures and requirements.
- 3.5 Subsequently, workforce plan challenge sessions were held with line managers to review and optimise with the aim at reducing the resource requirements.


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3.6 This process ultimately provides line managers with a framework for making human resource decision based on the organisation's mission, strategic plan, budgetary resources, and a set of desired workforce competencies.

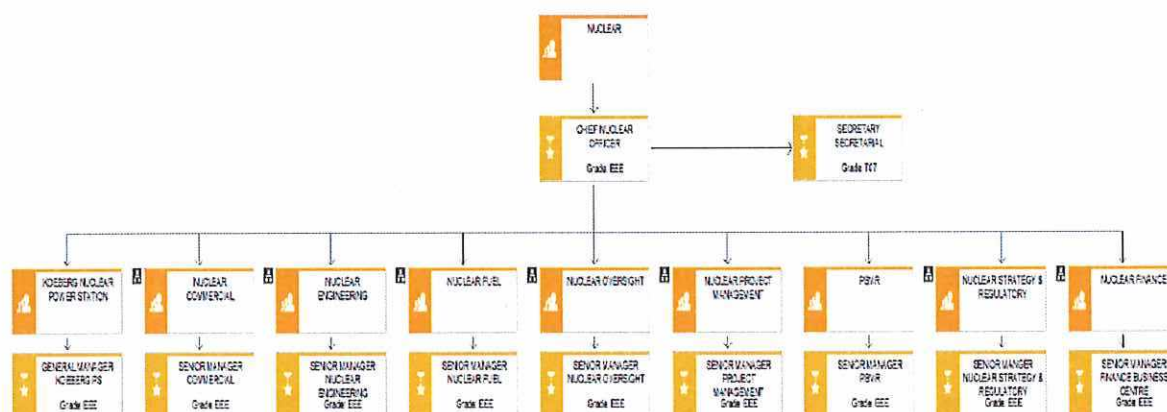
4. INTRODUCTION

4.1 The mandate of the Nuclear Operating Unit is to implement the Nuclear Policy and achieve the Eskom Nuclear Objectives, while delivering world-class nuclear energy, today, tomorrow and into the future.


- Besides the functional area mandate, expanded on in the subsequent sections, each functional area is required to foster an environment of continuous improvement through:
- The documenting, implementation, and maintenance of a Management System that supports the overall Integrated Management System as required by the Nuclear Management Policy
- Staying abreast of Koeberg and international operating experience
- Benchmarking and emulating top industry performance.
- Ensuring support as required to the corrective action programme.
- Analysing trends from events and observations to identify risks within the various departments.
- Managing Functional Area risks and reporting to NEXCO on those of risk significance (Level I and II).
- Measuring performance against the WANO PO&Cs through appropriate KPIs and drive towards excellence.
- Monitor performance through appropriate MRMs, and account performance to NEXCO.

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- 4.2 In order to deliver on its mandate, the organisational structure for NOU is show below. It should be noted that this is an interim structure, which will be revised once the Eskom relinking process has been completed. It is envisaged that the structure will be significantly streamlined:




- 4.2.1 **Koeberg Nuclear Power Station:** Generate electricity using nuclear energy in a safe, economic and sustainable manner.
- 4.2.2 **Nuclear Engineering:** Establishes and maintains the Koeberg design and safety basis, monitors and supports the utilisation of the asset in line with the design and safety basis and optimises the design in partnership with the Operator. They also maintain an appropriate level of readiness and capability within Eskom to deliver on possible Integrated Resource Planning (IRP) requirements e.g. siting availability and technical requirements.
- 4.2.3 **Nuclear Project Management:** To develop, manage, execute and monitor projects, on behalf of the Nuclear Operating Unit (NOU) in accordance with its management processes re time, budget, scope, quality, safety, health and environment. To be the custodian of the Nuclear Portfolio Investment Plan.
- 4.2.4 **New Build:** The Nuclear New Build group is re-linked from Group Capital as part of Eskom's restructuring strategy. The intent is to merge with Nuclear Project management to have one Functional Area dealing with Project Management within the Nuclear Operating Unit. Their mandate is currently the same as Nuclear Project Management – dealing specifically with the Steam Generator Replacement Project and the project management of the Nuclear Siting activities. The Nuclear Project

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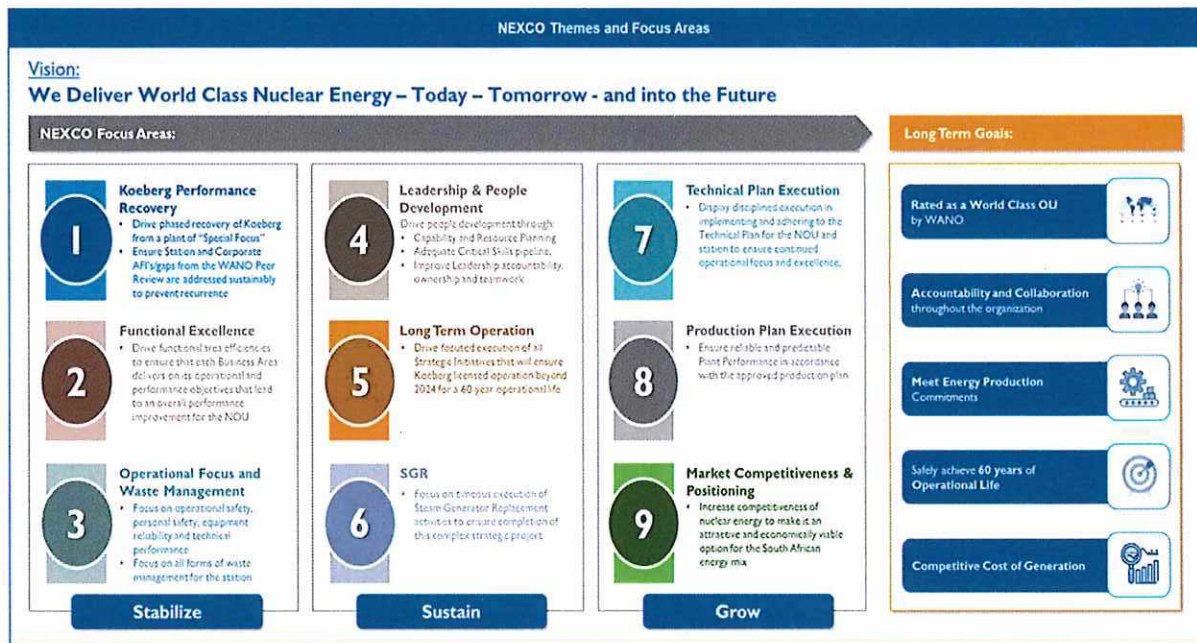
Management and New Build BAs will be combined in the future revision of the organisational structure.

- 4.2.5 **Nuclear Commercial:** To provide a materials management function and procure/source the right product/service to the NOU at the right time without causing production interruptions, while complying with nuclear license requirements.
- 4.2.6 **Nuclear Strategy and Regulations:** Maintain the nuclear governance structure on behalf of the CNO. Manage the assigned nuclear specialists to ensure effective support to the Station and OU. Provide the licencing support for the NOU, and manage the Eskom interface with the NNR. Provide Nuclear Communications (internal and external), and Stakeholder management.
- 4.2.7 **Nuclear Fuel:** Optimally source and supply nuclear fuel and provide nuclear backend management services required by Eskom.
- 4.2.8 **Nuclear Oversight:** To independently review, assess and report to the Chief Nuclear Officer on the extent to which the Nuclear Operating Unit fulfils its nuclear safety role effectively and sustainably in the discharge of its mandate. Provide assurance that the nuclear safety objectives of the organisation are being met.
- 4.2.9 **Finance:** Provide the required financial services to the Nuclear Operating Unit.
- 4.2.10 **Human Resources:** To create a high performance culture through partnering and empowering line management to recruit, develop and retain highly skilled, committed, engaged and accountable employees across the organisation.

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5. NOU WORKFORCE DRIVERS

The workforce requirements for the NOU are informed by the Operational Plan, which contains the following Focus Areas over the next 5 years:



The critical list of activities that will need to be completed or sustained over the 5 years period for NOU to achieve its goals, and which will be the key driver for workforce planning is shown below:

	Area/Activities	Description
	Nuclear Performance Recovery	<ul style="list-style-type: none"> Drive sustained recovery of Koeberg from station of "Special Focus" through addressing identified station and corporate gaps and sustain performance and enable sustained excellent performance subsequently
	Operational Focus and Waste Management	<ul style="list-style-type: none"> Focus on operational safety, personal safety, equipment reliability and technical performance for the station Focus on all forms of waste management and planning for the station
	SGR	<ul style="list-style-type: none"> The Steam Generator Replacement (SGR) project forms part of the Long Term Asset Management (LTAM) strategy approved by the Eskom board. It entails replacement of all six steam generators (three per unit)
	Long Term Operation	<ul style="list-style-type: none"> Operation of the Koeberg units must be demonstrated to be sustainable and economically viable for at least 60 years by completing all required supporting initiatives (e.g. plant mods, SALTO, SRA III, studies, inspections, etc.) to ensure licensed operation beyond 2024
	Market Competitiveness	<ul style="list-style-type: none"> Optimization of Capex and cost of generation to become the preferred supplier of electricity in the context of business separation and power station clustering – the direct focus supports roll-out of additional nuclear capacity post 2030


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The staffing requirements, both permanent and temporary for short term or project-based activities will be optimised to ensure minimal cost impact, while ensuring that the strategic requirements will be achieved.

In the past 12 years, the staffing levels were initially increased in anticipation of further Nuclear New Build activities, redeployment of PBMR Client Office staff into the NOU, as well as to bolster Operational staff numbers in driving process improvements as guided by nuclear industry best practice. The numbers have however been declining since 2013, driven by a combination of centralisation (of HR, Finance, Group Capital and Security) and not filling all positions vacated by staff attrition. A large egress of staff in the 2015 - 2018 period highlighted the vulnerability of certain critical functions to the external nuclear market.

While the Nuclear New Build is still being pursued as part of the IRP 2019 by the DMRE, the staffing levels do not consider additional New Build activities beyond finalising the Nuclear Site Licensing (NSL) and Environmental Impact Assessment (EIA) processes. Should Eskom decide to pursue new build nuclear activities, the workforce plan will need to be revised accordingly.

The influx of staff for New Build, and the subsequent stopping thereof had created an organisation which was not optimally set up for the O&M and Engineering activities for Koeberg power station. When PBMR and later New Build was stopped, staff were redeployed into other areas of the business, to support O&M and life renewal activities, leading to a perception that there is no need to recruit additional staff to support Koeberg LTO. The life expansion activities comprise of large plant modifications or refurbishment, extensive engineering studies to obtain approval for projects and licence renewal and additional O&M activities related to inspections and maintenance. With the continuous attrition and the inability to replenish existing staff numbers, the staffing levels have now declined to a point where not all the activities will be achievable with the current staff. Implementation of the actions stemming from the 2019/20 workforce plan, intends to correct this concern.

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Based on the assumption of no new build, and following the completion of the life extension activities, it is envisaged that the NOU structures can be allowed to reduce in staff numbers post 2025. Benchmark numbers indicate that a staff complement of 1 218 would make Koeberg aligned to stations such as PAIA 36(b) third party reference information


which are based in the United States of America (USA). These stations were considered as they are similar to Koeberg, being 2–unit single site stations, and are/were not part of a fleet of nuclear power stations (at the time of comparison) – i.e. they are the only nuclear power plants within the power utility. When determining difference in the working culture, skills and competency the following should be considered:

- Remote location and lack of local nuclear specialized skills required for routine activities in South Africa
- In the USA there is a very strong role played by the NRC (and NEI), with less need for localized engineering and policy functions at station or utility level
- Differences in Labour Relations Laws and practices (ability to hire and fire is different)
- Employment Equity Act requirements in South Africa

When comparing the different departmental functions within the NOU with the equivalent USA business areas or departments and including the South African considerations, a higher comparative headcount can be expected for the NOU, i.e. the NOU Operating numbers would be 1602. The staffing number for the NOU, based on insights from the 2019/20 Eskom Workforce planning process, reviewing the historical staffing movement numbers and the workload for the next 5 years, the expected benchmark is 1608 (including FTCs) in 2022.

In addition, short-term project activities linked to critical plant life extension work will be staffed through a combination of Fixed Term Contractors, Service contracts, and where possible by obtaining seconded personnel from elsewhere in Eskom on a temporary basis.

The approved Eskom's Workforce Plan FY 2021-2030 further states that the "additional resources requirements for Nuclear were excluded from the WFP as the requirements did not align with the modelling framework". The needs should be reviewed through governance structures as a special once off resourcing request.

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6. REQUIRED WORKFORCE AND SKILLS

Scenario 1


According to the workforce plan output, the NOU requires 1921 employees in order to fulfil its mandate. The required workforce results in a net increase of 417 headcount compared to the current available base of 1553 (as at Feb 2020). Growth is mainly from Maintenance, Radiation Protection, Nuclear Services, Work Management, Nuclear Engineering and Nuclear Project Management. The growth is attributed mainly to replace the loss of skills over time as the NOU has suffered a huge skills loss due international nuclear market across the organisation.

Following the decision by EXCO to relink all services functions to Operating Unit, NOU experienced several movements of staff and this has resulted in NOU numbers increasing.

6.1 Table illustrate the Workforce growth projection in 10 years


	'FEB 2020	REQ REVISED	FY_2021	FY_2022	FY_2023	FY_2024	FY_2025	FY_2026	FY_2027	FY_2028	FY_2029	FY_2030
KOEBERG NUCLEAR PS	1 087	1 345	1 139	1 190	1 242	1 293	1 345	1 345	1 345	1 345	1 345	1 345
KOEBERG NUCLEAR PLANT	747	864	770	794	817	841	864	864	864	864	864	864
MAINTENANCE	323	427	344	365	385	406	427	427	427	427	427	427
OPERATING	254	187	241	227	214	200	187	187	187	187	187	187
RADIATION PROTECTION	135	178	144	152	161	169	178	178	178	178	178	178
WORK MANAGEMENT	34	69	41	48	55	62	69	69	69	69	69	69
PLANT MANAGEMENT	1	3	1	2	2	3	3	3	3	3	3	3
NUCLEAR SERVICES	143	210	156	170	183	197	210	210	210	210	210	210
PLANT TRAINING	87	125	95	102	110	117	125	125	125	125	125	125
BUSINESS SUPPORT	38	76	46	53	61	68	76	76	76	76	76	76
HUMAN RESOURCES	23	36	26	28	31	33	36	36	36	36	36	36
INDPT SAFETY EVALUATION	23	28	24	25	26	27	28	28	28	28	28	28
STRATEGIC PROJECT READINESS	20	3	17	13	10	6	3	3	3	3	3	3
KOEBERG NUCLEAR MNGMT	6	3	5	5	4	4	3	3	3	3	3	3
NUCLEAR ENGINEERING	270	310	278	286	294	302	310	310	310	310	310	310
NUCLEAR COMMERCIAL	83	107	88	93	97	102	107	107	107	107	107	107
NUCLEAR PROJECT MANAGEMENT	55	86	61	67	74	80	86	86	86	86	86	86
NUCLEAR STRATEGY & REGULATION	27	32	28	29	30	31	32	32	32	32	32	32
NUCLEAR OVERSIGHT	15	22	16	18	19	21	22	22	22	22	22	22
NUCLEAR FUEL	8	12	9	10	10	11	12	12	12	12	12	12
NUCLEAR SAFETY & ASSURANCE	7	5	7	6	6	5	5	5	5	5	5	5
NUCLEAR MANAGEMENT	1	2	1	1	2	2	2	2	2	2	2	2
Grand Total	1 553	1 921	1 627	1 700	1 774	1 847	1 921	1 921	1 921	1 921	1 921	1 921

The above workforce numbers were because of the challenge sessions held by NOU leadership. To ensure a smooth transition from the current base, the required growth is spread over a period of 10 years, between FY2021 and FY 2030.

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6.2 The table illustrates the job families in the Nuclear Operating Unit

	'FEB 2020	REQ REVISED	FY_2021	FY_2022	FY_2023	FY_2024	FY_2025	FY_2026	FY_2027	FY_2028	FY_2029	FY_2030
TECHNICIAN	194	294	214	234	254	274	294	294	294	294	294	294
ARTISAN	170	100	156	142	128	114	100	100	100	100	100	100
ADVISOR	138	174	145	153	160	167	174	174	174	174	174	174
OFFICER	125	192	138	152	165	179	192	192	192	192	192	192
MANAGER	113	140	118	124	129	135	140	140	140	140	140	140
INSPECTOR	99	110	101	103	106	108	110	110	110	110	110	110
ENGINEER	94	107	97	99	102	105	107	107	107	107	107	107
CLERK	92	126	99	106	112	119	126	126	126	126	126	126
SHIFT SUPERVISOR	60	76	63	66	69	72	76	76	76	76	76	76
OPERATOR	59	101	67	76	84	92	101	101	101	101	101	101
OFFICIAL TECH	56	89	63	69	76	83	89	89	89	89	89	89
SUPERVISOR	54	70	57	60	63	66	70	70	70	70	70	70
TECHNOLOGIST	46	58	48	51	53	56	58	58	58	58	58	58
ENGINEERING ASST	42	6	35	28	20	13	6	6	6	6	6	6
RADIATION PROTEC	41	53	43	46	48	50	53	53	53	53	53	53
PHYSICIST	32	29	31	31	30	29	29	29	29	29	29	29
SECRETARY	22	29	23	25	26	28	29	29	29	29	29	29
INSTRUCTOR	18	28	20	22	24	26	28	28	28	28	28	28
PLANNER	16	24	18	19	21	22	24	24	24	24	24	24
PROJECT LEADER	13	21	15	16	18	19	21	21	21	21	21	21
SPECIALIST	12	11	12	12	11	11	11	11	11	11	11	11
STOREMAN	12	20	14	15	17	19	20	20	20	20	20	20
INSTR MECHANICIAN	10	1	8	6	5	3	1	1	1	1	1	1
CHEMICAL ANALYST	8	13	9	10	11	12	13	13	13	13	13	13
OFFICIAL NON TECH	6	3	5	5	4	3	3	3	3	3	3	3
SCIENTIST	5	6	5	5	5	5	6	6	6	6	6	6
DRIVER	4	8	5	6	7	8	8	8	8	8	8	8
OCC HEALTH NURSE	3	4	3	3	4	4	4	4	4	4	4	4
DRAUGHTSMAN	3	3	3	3	3	3	3	3	3	3	3	3
COORDINATOR	2	5	3	3	4	5	5	5	5	5	5	5
CHEMIST	2	3	2	2	3	3	3	3	3	3	3	3
CONTROLLER	1	13	3	6	8	11	13	13	13	13	13	13
BIOKINETICIST	1	1	1	1	1	1	1	1	1	1	1	1
ADMINISTRATIVE ASST		2	0	1	1	1	2	2	2	2	2	2
METROLOGIST		2	0	1	1	2	2	2	2	2	2	2
Grand Total	1 553	1 921	1 627	1 700	1 774	1 847	1 921	1 921	1 921	1 921	1 921	1 921

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Scenario 2

Scenario 2 benchmark numbers stipulate that the average of manpower numbers is 1 218 across the selected benchmark stations (2014) namely,

PAIA 36(b) third party reference information


which are based in the United States.

These stations were considered as they are similar to Koeberg, being 2–unit single site stations, which are not part of a fleet of nuclear power stations – i.e. they are the only nuclear power plants within the power utility. When determining difference in the working culture, skills and competency the following should be considered:

- Remote location and lack of local nuclear specialized skills required for routine activities in South Africa
- In the US there is a very strong role played by the NRC, with less need for localized engineering and policy functions at station or utility level
- Security can be housed in different departments
- Inspection & Test work for the NOU falls under Nuclear Engineering (38 people). This normally falls under Maintenance/Nuclear Services in the US

When comparing the different departmental functions within the NOU equivalent to the business areas or departments with higher comparative headcount among the five stations, the NOU Operating numbers would be 1 579. The staffing number for the NOU, based on insights from the Eskom Workforce planning process, reviewing the historical staffing numbers, the workload for the next 5 years and the comparison to the US benchmark is 1608 (including FTCs) in FY2022.

In addition, short-term project activities linked to critical plant life extension work will be staffed through a combination of FTCs, service contracts, and where possible by obtaining seconded personnel from elsewhere in Eskom on a temporary basis.


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6.3 This Table illustrate the Workforce numbers for the next 10 years

	FY_2021	FY_2022	FY_2023	FY_2024	FY_2025	FY_2026	FY_2027	FY_2028	FY_2029	FY_2030	BENCH_MAX
☐ KOEBERG NUCLEAR PS	1 113	1 129	1 123	1 117	1 111	1 093	1 076	1 059	1 042	1 025	1 246
☐ KOEBERG NUCLEAR PLANT	769	781	771	761	751	742	734	725	717	709	771
MAINTENANCE	342	361	361	361	361	352	344	335	327	319	391
OPERATING	244	234	224	214	204	204	204	204	204	204	204
RADIATION PROTECTION	145	145	145	145	145	145	145	145	145	145	98
WORK MANAGEMENT	37	40	40	40	40	40	40	40	40	40	35
PLANT MANAGEMENT	1	1	1	1	1	1	1	1	1	1	3
⊕ NUCLEAR SERVICES	147	151	155	159	163	159	155	151	148	144	252
⊕ PLANT TRAINING	87	87	87	87	87	85	83	81	79	77	61
⊕ BUSINESS SUPPORT	38	38	38	38	38	37	36	35	34	34	93
⊕ INDPT SAFETY EVALUATION	23	23	23	23	23	22	22	21	21	20	23
⊕ HUMAN RESOURCES	23	23	23	23	23	22	22	21	21	20	23
⊕ STRATEGIC PROJECT READINESS	20	20	20	20	20	19	18	17	16	16	20
⊕ KOEBERG NUCLEAR MNGMT	6	6	6	6	6	6	6	6	6	5	6
⊕ NUCLEAR ENGINEERING	275	280	280	280	280	273	267	260	254	248	175
⊕ NUCLEAR COMMERCIAL	83	83	83	83	83	81	79	77	75	73	53
⊕ NUCLEAR PROJECT MANAGEMENT	55	55	55	55	55	54	52	51	50	49	52
⊕ NUCLEAR STRATEGY & REGULATION	27	27	27	27	27	26	26	25	24	24	16
⊕ NUCLEAR OVERSIGHT	15	15	15	15	15	15	14	14	14	13	16
⊕ NUCLEAR FUEL	11	11	11	11	11	11	10	10	10	10	14
⊕ NUCLEAR SAFETY & ASSURANCE	7	7	7	7	7	7	7	7	6	6	5
⊕ NUCLEAR MANAGEMENT	1	1	1	1	1	1	1	1	1	1	2
Grand Total	1 587	1 608	1 602	1 596	1 590	1 561	1 532	1 504	1 476	1 449	1 542

Following completion of the life extension project, refurbishments and studies, and licence renewal is obtained from the NNR in 2024/25, the workforce requirements will decline and it is expected that efficiencies can be obtained to reduce staffing numbers.

It should be noted that Finance and Nuclear New Build departments (including the SGR Project) were not included in the numbers above as the WFP process was conducted prior to relinking these functions.


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6.4 This table illustrates the job families required in the next 10 years:

	FY_2021	FY_2022	FY_2023	FY_2024	FY_2025	FY_2026	FY_2027	FY_2028	FY_2029	FY_2030
TECHNICIAN	232	242	242	242	242	237	232	227	223	218
ADVISOR	138	138	137	136	135	132	129	126	123	121
OFFICER	132	133	133	134	135	131	127	123	120	116
OPERATOR	125	120	115	111	106	106	106	106	106	106
MANAGER	121	122	121	121	120	119	117	115	114	111
ENGINEER	99	101	100	100	100	98	95	92	90	88
SHIFT SUPERVISOR	94	91	88	85	82	82	81	81	80	80
CLERK	87	88	88	88	88	86	84	82	81	79
ARTISAN	80	84	84	84	84	82	80	78	76	74
INSPECTOR	76	78	80	82	84	82	80	78	76	74
OFFICIAL TECH	70	73	73	73	73	72	71	70	69	68
SUPERVISOR	54	56	56	56	56	55	54	53	52	51
TECHNOLOGIST	52	53	53	53	53	51	50	49	48	46
RADIATION PROTEC	42	42	42	42	42	42	42	42	42	42
SECRETARY	29	29	29	29	29	29	29	29	29	28
PHYSICIST	28	29	29	29	29	28	28	27	27	26
INSTRUCTOR	23	22	22	22	22	21	21	20	20	20
PLANNER	19	20	20	20	20	19	19	19	18	18
STOREMAN	15	15	15	15	15	15	15	14	14	13
SPECIALIST	12	12	12	12	12	12	12	12	12	12
PROJECT LEADER	11	11	11	11	11	11	10	10	10	9
CHEMICAL ANALYST	10	10	10	10	10	10	10	10	10	10
CONTROLLER	8	8	8	8	8	8	8	8	8	8
ENGINEERING ASST	5	5	5	5	5	5	5	5	5	5
SCIENTIST	5	5	5	5	5	5	5	5	5	5
DRIVER	4	4	4	4	4	4	4	4	4	4
COORDINATOR	3	3	3	3	3	3	3	3	3	3
CHEMIST	3	3	3	3	3	3	3	3	3	3
DRAUGHTSMAN	3	3	3	3	3	3	3	3	3	3
OCC HEALTH NURSE	2	2	2	2	2	2	2	2	2	2
OFFICIAL NON TECH	2	2	2	2	2	2	2	2	2	2
METEOROLOGIST	1	1	1	2	2	2	1	1	1	1
BIOKINETICIST	1	1	1	1	1	1	1	1	1	1
INSTR MECHANICIAN	1	1	1	1	1	1	1	1	1	1
ADMINISTRATIVE ASST	1	1	1	1	1	1	1	1	1	1
Grand Total	1 587	1 608	1 602	1 596	1 590	1 561	1 532	1 504	1 476	1 449

PAIA 36(b) third party reference information

on similar two similar Power Stations suggest that each Power Station has about 1000 employees including contractors in the Power Station. However, it is important to note that these numbers are only for the Power Station and include seconded numbers from

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head office. These numbers are somehow in line with Koeberg Power Station permanent numbers excluding long-term contractors.

7. APPROVED WORKFORCE NUMBERS IN LINE WITH GENERATION DIVISION TARGET


Nuclear Operating Unit has to align its workforce planning to Eskom and Generation Division's workforce plan strategy.

7.1 Table illustrate the Workforce growth projection/reduction progression in 10 years

NUCLEAR	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
KOEBERG NUCLEAR PS	1 039	1 008	993	978	962	948	932	920	908	898
NUCLEAR COMMERCIAL	80	78	77	76	74	73	72	71	70	69
NUCLEAR ENGINEERING	264	256	252	248	244	240	236	233	230	228
NUCLEAR FINANCE	27	6	5	5	5	5	5	5	5	5
NUCLEAR FUEL	8	8	7	7	7	7	7	7	7	7
NUCLEAR MANAGEMENT	1	1	1	1	1	1	1	1	1	1
NUCLEAR NEW BUILD	51	50	49	48	48	47	46	45	45	44
NUCLEAR OVERSIGHT	14	13	13	13	13	12	12	12	12	12
NUCLEAR PROJECT MANAGEMENT	63	57	55	52	49	49	48	47	47	46
NUCLEAR SAFETY & ASSURANCE	7	7	6	6	6	6	6	6	6	6
NUCLEAR STRATEGY & REGULATORY	44	42	42	41	40	40	39	39	38	38
GRAND TO TOTAL	1 598	1 526	1 502	1 477	1 451	1 429	1 406	1 387	1 370	1 354

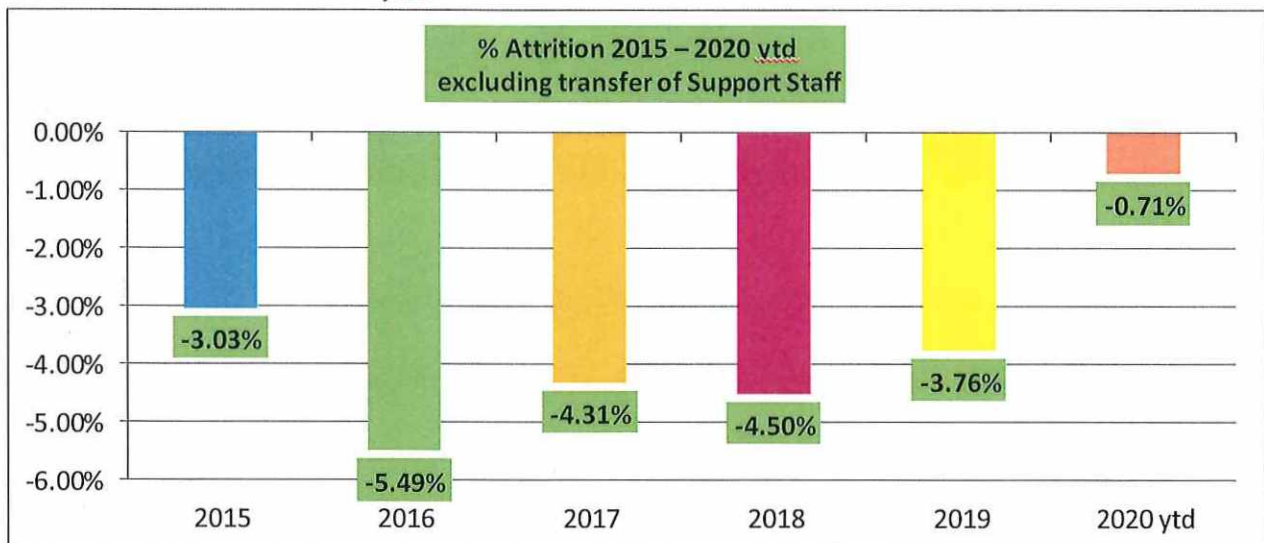
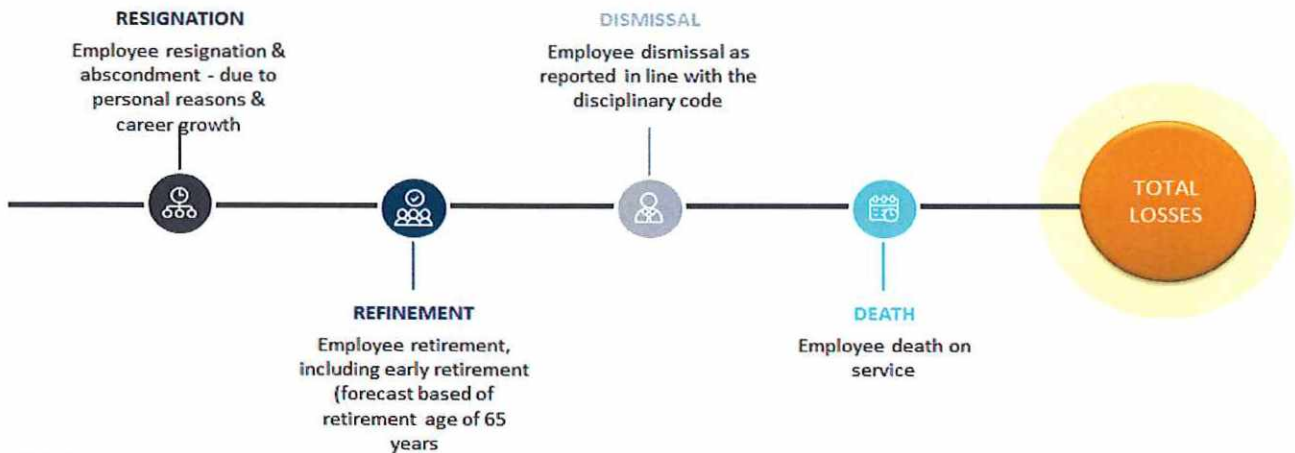
7.2 This table illustrates the job families required in the next 10 years

NUCLEAR	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
ADVISOR	145	139	136	134	131	129	127	125	124	122
ARTISAN	165	160	157	155	152	150	148	146	144	142
BIOKINETICIST	1	1	1	1	1	1	1	1	1	1
CHEMICAL ANALYST	8	8	7	7	7	7	7	7	7	7
CHEMIST	2	2	2	2	2	2	2	2	2	2
CLERK	90	87	85	84	83	81	80	79	78	77
CONTROLLER	1	1	1	1	1	1	1	1	1	1
COORDINATOR	4	4	4	4	4	4	3	3	3	3
DRAUGHTSMAN	3	3	3	3	3	3	3	3	3	3
DRIVER	4	4	4	4	4	4	3	3	3	3
ENGINEER	94	92	90	89	87	86	85	84	83	82
ENGINEERING ASST	41	39	39	38	38	37	36	36	36	35
INSPECTOR	96	93	92	90	89	87	86	85	84	83
INSTR MECHANICIAN	10	9	9	9	9	9	9	9	8	8
INSTRUCTOR	17	17	17	16	16	16	16	15	15	15
MANAGER	140	129	126	123	121	119	117	115	114	113
OCC HEALTH NURSE	3	3	3	3	3	3	3	3	3	3
OFFICER	158	140	137	134	132	129	127	126	124	123
OFFICIAL NON TECH	6	6	6	5	5	5	5	5	5	5
OFFICIAL TECH	54	53	52	51	50	49	49	48	47	47
OPERATOR	57	55	55	54	53	52	51	51	50	49
PHYSICIST	31	30	30	29	29	28	28	27	27	27
PLANNER	16	15	15	15	14	14	14	14	14	13
PROJECT LEADER	13	12	12	12	12	11	11	11	11	11
RADIATION PROTEC	40	39	38	37	37	36	36	35	35	34
SCIENTIST	5	5	5	5	4	4	4	4	4	4
SECRETARY	23	23	22	22	22	21	21	21	20	20
SHIFT SUPERVISOR	58	56	56	55	54	53	52	51	51	50
SPECIALIST	12	11	11	11	11	11	10	10	10	10
STOREMAN	12	11	11	11	11	11	10	10	10	10
SUPERVISOR	56	54	53	52	51	50	50	49	48	48
TECHNICIAN	190	185	182	180	177	174	171	169	167	165
TECHNOLOGIST	45	43	43	42	41	41	40	39	39	38
GRAND TO TOTAL	1 598	1 526	1 502	1 477	1 451	1 429	1 406	1 387	1 370	1 354

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8. WORKFORCE ATTRITION

Workforce attrition projections was determined based on the historical trends of the four main factors that affect attrition, that is, resignation, dismissal, retirement and death.



In 2016 the NOU experienced loss of skills mainly to international nuclear power plant construction, which have lucrative and competitive remuneration packages. It has since been impossible to compete with the external market remuneration packages.

However, the attrition rate has since stabilized to about 3.76% although the NOU is still experiencing continuous loss of skills.

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a. Workforce attrition projection

The NOU has an aging workforce from 2023 onwards with a large number of experienced staff going on retirement. The challenge for NOU will be ensuring that the older generation with solid experience transfer the knowledge while still in the employ of Eskom, through a robust knowledge management process. The average attrition for the NOU is set to be at 5%.

Attrition rate projections show that headcount will decrease by an avg. of 75 people/annum from 1 544 to 1 169 over 5 yrs

Projected Attrition Rate: 2020 - 2025

EXIT YEAR	Absconded	Deceased	Dismissed	Resignation	Retirement	Separation Package	Grand Total
2015	-	3	4	46	14	-	67
2016	-	3	3	44	27	-	77
2017	-	2	3	46	30	-	81
2018	-	1	-	43	33	-	77
2019	-	4	2	35	30	-	71
2020 YTD	2	-	-	9	5	3	19
Grand Total	2	13	12	223	139	3	392
EXCL 2020	0	13	12	214	134	0	373
AVERAGE	0	2.6	2.4	42.8	26.8	0	74.6
AVERAGE PER ANNUM = 74.6							

Projected NOU headcount: 2020 - 2025

Increase in attrition rate (%) is artificial as recruitment is not taken into account

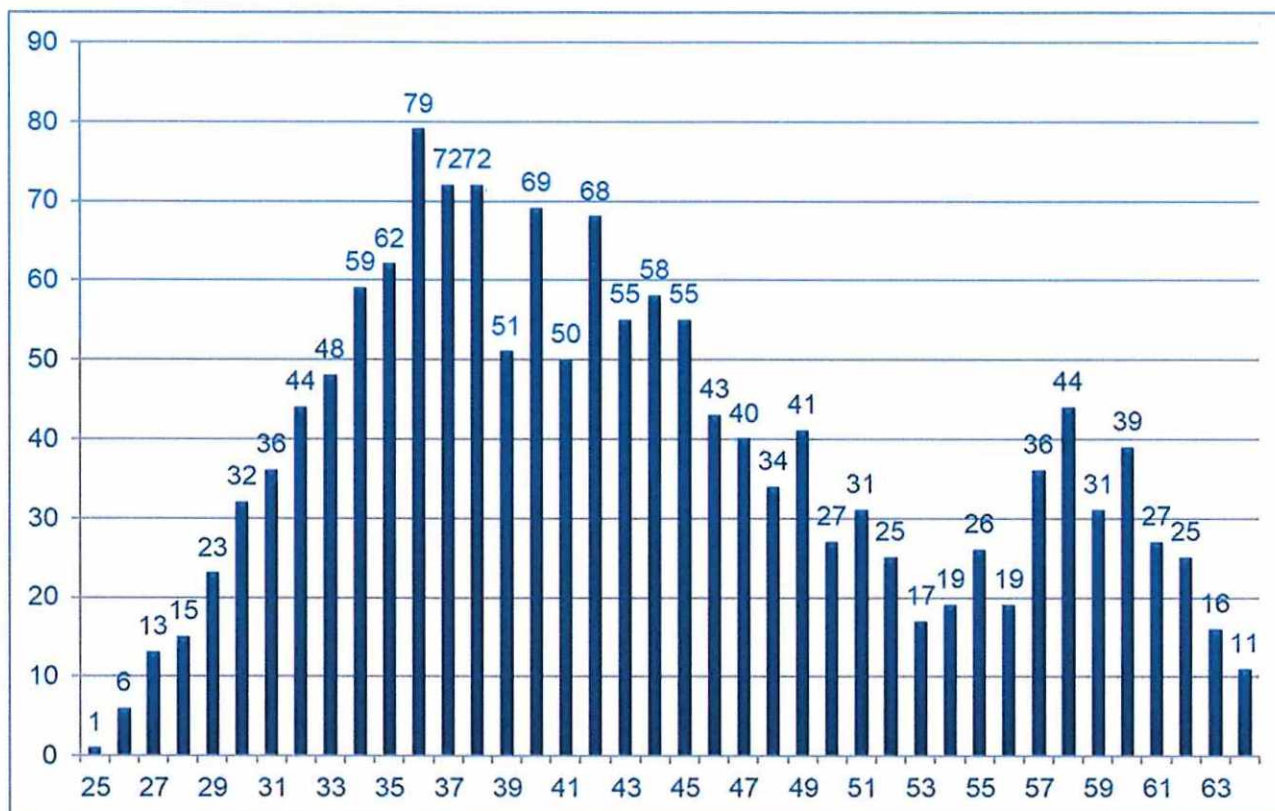


SOURCE: HR Analysis

An attrition projection estimate of 375 loss of employees in the next five years. The NOU will be required to close the gaps created by this loss.

9. NOU AGE PROFILE


The profile resembles the overall workforce age distribution:



The NOU age profile is concentrated between the ages of 35 - 45. These employees have an estimated 5- 15 nuclear experience. The Nuclear business requires at least 10 years dwell time for an employee to become a respected nuclear professional. The NOU experienced a huge skills loss within this age category, as normally people tend to make future career decisions in preparation for retirement.

There is a concentration of staff in the age group 57 – 61, who possess high nuclear experience and are approaching retirement, which will require NOU to focus on skills transfer strategies over the coming years.

It is however of a huge concern that we have fewer employees in the age category of 25-30 years. This is indicative of a weak pipeline to sustain the organization now and beyond life expansion.

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10. COMPETENCIES DEVELOPMENT

The Nuclear Operating Unit has established a training and qualification programme to ensure that personnel are trained, qualified and deemed competent to accomplish the assigned duties.

The NOU process for training is described in the Nuclear Training Manual 238-144. The process is further expanded on in the Station Training Standard (KSA-049) and the associated Systematic Approach to Training Procedures (KAA-780 through KAA-784). Furthermore, engineering training process descriptions are documented in KGT-071 for Plant Engineering, 331- 218 for Nuclear Engineering and KGT-047 for Inspection and Test. The training processes follow both national and international guidance, for example The Process for Accreditation of Training in the Nuclear Power Industry Rev1, and Standard for qualification and certification of NDT personnel CP-189 of 1995 (ASME 11) and ISO 9712.

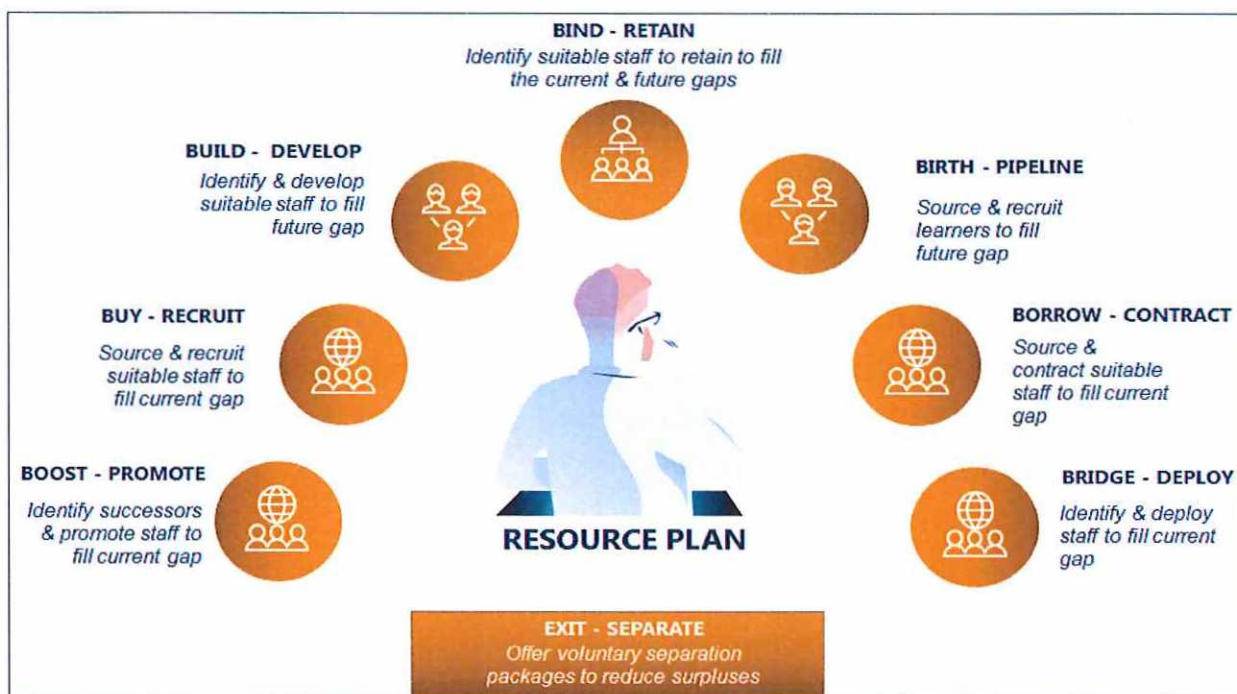
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The Training department however has experienced an ongoing shortage of instructors for Licensed Operating training. This has led to the use of international contractors, as the skill is not readily available locally.

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11. RESOURCE PLAN


The resource plan 7B's provides a list of possible strategies that could be used to help mitigate the critical needs and resource requirements.



12. IMPLEMENTATION LEVERS


To ensure that the NOU will have sufficient workforce and skills required to meet the business objectives, strategies there is a need to focus on bringing more pipeline staff into the business (*BIRTH – PIPELINE*). This means that the NOU will need to be granted permission to employ the learners once they are qualified. The development of new inexperienced employees should therefore be another focus area (*BUILD - DEVELOP*).

The NOU will over the next 4 years require an increased effort related to the Long Term Operation activities required to extend the plant life by 20 years, which will require additional Maintenance, Engineering, Project Management, and Inspection & Testing resources within the organisation. For the associated project and licence renewal work, all areas would however be challenged to support the increased workload.

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The pipeline (*BIRTH – PIPELINE*) and reassignment will be used to bring in additional resources, while experienced employees will be required to support the Power Station functions to ensure proper technical support, mentoring and coaching of new personnel and support to production and to perform portions of the LTO studies and projects. This can be done via assignment, secondment or redeployment (*BRIDGE – DEPLOY*).

Where possible, opportunities will be sought to utilise skilled employees from Eskom's large build projects or from the decommissioning of older power stations. This would enable provide the benefit of experienced people, who could be trained to nuclear job requirements within a shorter period (*BRIDGE – DEPLOY*). Critical skills will need to be sourced from the market where there is not sufficient time to develop or these are not available internal to Eskom or the NOU (*BUY - RECRUIT*).

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Below is the breakdown of how each of the above identified levers to be implemented over the planning period.

Lever	Description	Implementation
Learner pipeline	<ul style="list-style-type: none"> Gap for core skills at entry and intermediate level will be closed through a robust learner pipeline 	<ul style="list-style-type: none"> NOU to ensure the learner pipeline is sufficient to close the identified gaps
Recruit external	<ul style="list-style-type: none"> Recruitment for resources outside Eskom will be limited to those roles where a pipeline cannot work & proven that no internal resource can be redeployed to close the gap 	<ul style="list-style-type: none"> NOU to upfront identify those roles where no internal resource or from a learner pipeline can close and obtain approval from its board and Eskom EXCO
Redeploy	<ul style="list-style-type: none"> Move resources from areas of surplus to areas of shortages This include relinking of staff from corporate functions to line divisions 	<ul style="list-style-type: none"> NOU to identify surplus staff and suitable areas of business where they can be relinked or transferred
Recruit internal	<ul style="list-style-type: none"> Positions at high level are to be filled with internal appointment and promotions 	<ul style="list-style-type: none"> NOU to identify positions to be filled and follow the internal process for appointment. Most critical positions have filled with 118 appointments
Contracts	<ul style="list-style-type: none"> Gaps created due to temporary nature of skills requirements e.g. reduce a backlog or executing a project 	<ul style="list-style-type: none"> NOU to address its workforce requirements for temporary workforce relief through contracts or FTC
Develop & retain	<p>In certain instance required workforce is due to incompetent staff or loss of very competent staff</p>	<ol style="list-style-type: none"> NOU upskilling, and NOU to address its workforce requirements for temporary workforce relief through contracts or FTC Staff to be retained

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13. PIPELINE RESOURCING PLAN TO CLOSE THE WORKFORCE GAP

A skills replenishment plan of 5% learner pipeline as per benchmark is required to maintain sustainability in the organization.

The total (5%) pipeline is required for sustainability is required for the first 5 years of the period, prior to plant life extension. The focus of the pipeline will be in Maintenance (Artisans, Technicians), Engineering (incl. Physicists), Chemistry and Radiation Protection (RP Monitors).

14. CONCLUSION

A consultative process with line managers, facilitated by Human Resources was followed in order to establish the workforce requirements for the Nuclear Operating Unit. That process resulted in 1921 work force requirements. These numbers are way over the benchmark of both USA and EDF Power Station.

Scenario 2 of 1 608 was recommended for workforce requirements for NOU as discussed under 6.3. Although these recommended numbers are still higher than the benchmarked numbers, it is important to note the increased workload over the next 5 years and the differences in working culture and environment.

However NOU has to align to Generation Workforce plan of 1 526 for FY 2022.

