

Public Participation Report

Coastal Waters Discharge Permit Application for Koeberg
Nuclear Power Station

September 2016

31 Allen Drive
Loevenstein
Cape Town 7530
South Africa

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Eskom

Public Participation Report

Coastal Waters Discharge Permit Application for Koeberg Nuclear Power Station

Synopsis

This report is a summary of the public participation process conducted in support of the Coastal Waters Discharge Permit Application for Koeberg Nuclear Power Station. The public participation process was conducted in accordance with the document *"Public Participation Requirements for a Coastal Waters Discharge Permit Application"* (DEA 2014) and the National Environmental Management Act (NEMA), 107 of 1998 as amended and the Environmental Impact Assessment (EIA) Regulations, dated December 2014, was also used as guidance.

WorleyParsons RSA (Pty) Ltd, trading as Advisian, managed the public participation process on behalf of the client, namely Eskom Holdings SOC Limited (Eskom).

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Project No: C00278 – Public Participation Report: Coastal Waters Discharge Permit Application for Koeberg Nuclear Power Station

Rev	Description	Author	Review	Advisian Approval	Date
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1 Introduction

1.1 Project Description

An application in terms of Section 69 of the National Environmental Management: Integrated Coastal Management Act (NEM: ICMA), Act 24 of 2008, for a Coastal Waters Discharge Permit (CWDP) has been made by Eskom for the discharge emanating from Koeberg Nuclear Power Station (KNPS).

The discharge activity is associated with the operation of the power station, which utilises large volumes of seawater for cooling purposes. In addition to the cooling water discharge, industrial and domestic effluent is produced and is discharged along with the cooling water via the Koeberg cooling water outlet basin (KCWOB), which is situated south of the Koeberg cooling water intake basin (KCWIB).

KNPS has an existing statutory approval for the discharge activity. Through the promulgation of the NEM: ICMA in 2008, this Act has since repealed those provisions in terms of marine discharges, and therefore KNPS is required to apply for a CWDP in terms of the NEM:ICMA. The technical assessment report has been drafted and supporting specialist studies have been conducted in support of this application.

It should be noted that the NEM:ICMA does not make provision for stakeholder engagement and is therefore not a legal requirement, though recommended in terms of the Promotion of Access to Information Act and Promotion of Administrative Justice Act. Thus the project team recommended a 61-day public participation process which was conducted from 2 June to 2 August 2016. The public participation process was conducted to lobby for stakeholder engagement on this activity as per the various guideline documents namely, *"Public Participation Requirements for a Coastal Waters Discharge Permit Application"* (DEA 2014), and the Environmental Impact Assessment (EIA) Regulations, dated December 2014. The CWDP Application form and the above mentioned supporting documents were circulated for stakeholder review and comment.

1.2 Objectives of the Public Participation Process

Although there are no specific requirements for stakeholder engagement for CWDP's in terms of the NEM: ICMA, it is considered best practice that an appropriate level of stakeholder engagement occurs during the application process.

The objectives of the Public Participation Process are as follows-

- To identify and notify the relevant Interested and Affected Parties (IAPs) of the proposed project;



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- To address any environmental or social concerns and issues which may arise as a result of the proposed project;
- To provide stakeholders the opportunity to voice any concern related to the project; and
- To provide stakeholders the opportunity to review and provide feedback on the Application Form, the Technical Assessment Report, including the relevant specialist studies to ensure that the identified issues are adequately and suitably addressed.

2 The Public Participation Process

This section presents the activities undertaken as part of the public participation process.

2.1 Project Announcement and Identification of Stakeholders

Advertisements, notifying the public of the relevant application and availability of the supporting documentation, were placed in the "Cape Times" and "Die Burger", regional English and Afrikaans newspapers, on 1 June 2016; in addition the "TableTalk" and "Weskus Nuus", local English and Afrikaans newspapers, on 1 June and 14 June 2016, respectively. Please refer to Appendix A.

The Executive Summary document providing information on the project, its location and nature, background on the CWDP process and public registrations sheet was prepared. The Executive Summary was circulated to the existing registered IAPs, and made available on the Advisian Website. Please refer to Appendix B.

Site notices were also placed at the various entrances at Koeberg Nuclear Power Station (KNPS), and in the Koeberg, Wesfleur, and Avondale Public Libraries, including the Thusong Service Centre and Koeberg Visitors Centre. Please refer to Appendix C.

All the stakeholders that registered in response to notifications and advertisements are included in the attached IAP database, Appendix D.

2.2 Comment Period on the Technical Assessment Report

The draft Technical Assessment Report (TAR) and supporting specialist studies were available for public review from 2 June to 2 August 2016. The review of the draft TAR was advertised in the abovementioned newspapers, indicating the period of review, as well as the venues where the draft TAR would be available.

All registered identified IAPs were notified by electronic mail of the review period of the draft TAR. Proof is attached in Appendix E.

The Draft TAR and specialist studies were available at the following venues:

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Coastal Waters Discharge Permit Application for Koeberg Nuclear Power Station

- Advisian website:
<https://public-wst.worleyparsons.com/sites/AfricaEnviron/SitePages/Home.aspx>
- Koeberg Public Library (address: Merchant Walk, Duynfontein, Melkbosstrand. Tel no.: 021 553 2514);
- Wesfleur Public library (address: Wesfleur Circle, Dassenberg, Atlantis. Tel no.: 021 572 7618);
- Avondale Public Library (address: Civic Centre, Grosvenor Avenue, Atlantis Tel no.: 021 572 3529);
- Thusong Service Centre (address: 1 Nottingham Street, Sherwood Park, Atlantis. Tel no.: 021 572 0289); and
- KNPS Visitors Centre (address: Koeberg Nuclear Power Station, R27 off West Coast Road, Tel no.: 021 550 4667).

A database was kept of all comments received from IAP's; refer to Appendix F for the comments and responses.

2.3 Registered Interested and Affected Parties

Refer to Appendix D for the complete details of the identified and the registered IAPs: Please refer to Appendix G for all correspondence received from IAPs related to the project.

Herewith, a list of the identified IAPs:

Table 1: List of Registered Interested and Affected Parties

Organisation	Representative
DEA: Ocean & Coasts – Coastal Pollution Management	Mulalo Tshikotshi
DEADP: Development Facilitation	Adri La Meyer
DEADP: Development Management	Melanese Schippers
DEADP: Pollution and Chemicals Management	Anthony van Wyk
DEADP: Waste Management	Muneeb Baderoon
City of Cape Town	Morné Theron
CapeNature	Rhett Smart
Koeberg Public Safety Information Forum	Residents in surrounding areas

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Organisation	Representative
National Nuclear Regulator	Adriaan Joubert
National Sea Rescue Institute (Station 18: Melkbosstrand)	Rhine Barnes
Private Citizen	Lawrence Molele
Private Citizen	S Little
Private Citizen	Robert Els
Private Citizen	Penny Jenkins

2.4 Stakeholder Meetings

Two authority workshop meetings were held on 20 and 21 June 2016, with the Regulatory Authority and Commenting Authorities, respectively. The workshops were held to introduce the application to the authorities and to discuss the supporting specialist studies which were completed. Please refer to Appendix H for copies of the minutes of the workshops.

In addition, KNPS hosts a quarterly Public Safety Information Forum (PSIF) which is used as a platform for residents surrounding the KNPS to enquire and receive nuclear-related information. The PSIF was held on 30 June 2016, and advertised in the aforementioned media (as discussed in Section 2.1) The CWDP Application was one of the discussion points, and presented to the members of the public that attended the PSIF. Refer to Appendix H for the minutes of the PSIF meeting, the attendance register and the CWDP presentation.

3 Conclusion

The Public Participation was conducted to ensure that all issues and impacts of this application can be identified and addressed. Where relevant, all the comments made by stakeholders were addressed in the Technical Assessment Report (TAR).

Overall, the public has no objection to the application, and are in favour of KNPS's programme of continuous improvement regarding abatement measures. The protection of the environmental and cultural resources is promoted and a priority for KNPS.



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Appendix A Media Notices



Amber Anderson and Abraham Terkemani from Table View High School have made the Western Province team for the South African National Fitness and Hip Hop Championships in Cape Town this month. They are coached by Geoffrey Payne, from DanceLab.

■ The Explicit Dance Crew, from left, are Jordan Walters, Paige Potgieter, Michael Cronje, Sisipho Mpongoshe, Alana Prehn and Abraham Terkemani.



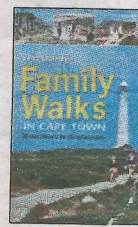
■ The Ikonik Dance Crew, from left, are Dayna Whaling, Izabelle Laufs, Alissa Laufs, Amber Anderson, Gina de Nobrega and Sasha-Lee January.



PICTURES: ALTUS TOLKIEN,
TOLKIEN MEDIA

Read of the Week

Family Walks In Cape Town
Tim Lundy
Struik Travel & Heritage
Review: Brian Joss



Tim Lundy, son of legendary hiker and author Mike, compiled this guide, subtitled *30 Easy Routes in the City and Surrounds*, with the "whinge meter" in mind – that is they had to be easily accessible to the young and old, so they wouldn't complain about the hard slog.

And he found them, some of which he had been driving past every day without knowing they existed. The guide, which fits in your pocket or backpack, is easy to navigate.

It covers broadly: Central Cape Town, the Atlantic Seaboard, the Southern Peninsula, southern suburbs and the northern suburbs. All the hikes are graded from easy to moderate and from moderate to strenuous and whether they are accessible to wheelchairs, prams, bikes and if dogs are allowed.

Among the places you can explore are Intaka Island at Century City with its 120 bird species. In Central Cape Town you can visit De Waal Park and the Molteno Reservoir. Enjoy a pleasant day at the Green Point Urban Park; at

Silvermine; Kommetjie and Slangkop lighthouse on the Southern Peninsula or Newlands Forest or for a more strenuous walk, De Hel, a riverine nature reserve below Rhodes Drive, in the southern suburbs.

Unless otherwise indicated all walks are free and Lundy also gives directions to get there and lists nearby places of interest.

The full colour volume includes maps and text boxes with interesting snippets of information.

Don't leave home without it.

● Don Lilford, former reporter and photographer on the Sentinel News, a Cape Community Newspapers' title, has written two books, one a collection of short stories, *Short Takes For The Long Haul*, for air travellers, and *Barry's Girl*, loosely based on his experiences on the Sentinel which is distributed in Hout Bay, except it is called the Cedar Bay Chronicle and all the action takes place in Cedar Bay, a small fishing village near Cape Town.

They are available for Kindle, smart phones, computers and other devices and you can read a sample before you decide to buy. Google Amazon.com/ Don Lilford and when you see the covers click on one and in the top right hand corner there is an invitation to read a free sample. A percentage of the sales goes to the author.

What's On

Hikes

Peninsula Ramblers are hiking the Kalk Bay circuit on Saturday June 4. Contact Elizabeth at 021 782 6999, 079 888 6073 or liz@robinson.wcape.school.za.

● On Sunday June 5 they have a strenuous hike up Suther Peak, Hout Bay. Entry is R20. Call Ian at 084 6244 691 or 021 447 7339. Visit www.ramblers.org.za.

● The Meridian Hiking Club is climbing India Venster on Saturday June 4 and returning with the cablecar. Contact Fredy on Whatsapp at 072 268 1241 or email fmmachinery@web.co.za

● On Sunday June 5 they are scrambling up Steenberg Buttress above Boyes Drive. Entry is R20. Contact Jenni at 083 3248 866 or jenni.fitzell@gmail.com

Battle of the bands

Battle Of The Bands will be at the Portuguese Club, in Milnerton, on Sunday June 12, at 1pm. Entry is R50. To book call 061 490 1694.

NOTICE OF APPLICATION FOR A COASTAL WATERS DISCHARGE PERMIT FOR KOEBERG NUCLEAR POWER STATION IN TERMS OF SECTION 69 OF THE INTEGRATED COASTAL MANAGEMENT ACT, (ACT NO. 24 OF 2008)

APPLICATION REFERENCE NO.: 2012/011/WC/KOEBERG POWER STATION

Notice is given, in terms of Section 69 of the National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008), that the Applicant, Eskom Holdings SOC Limited, hereby applies for a Coastal Waters Discharge Permit (CWDP) from the Department of Environmental Affairs (Oceans and Coasts) for the discharge emanating from Koeberg Nuclear Power Station (KNPS), situated on Farm Duynfontyn 1552.

KNPS is located approximately 30 km north of Cape Town, near Melkbosstrand on the West Coast of South Africa. This application for a CWDP is for the discharge of industrial and domestic effluent generated at the power station, via the existing Koeberg Cooling Water Outfall Basin located at the south west portion of the site boundary.

Draft Coastal Waters Discharge Permit Application Available For Review

The Draft CWDP Application and its supporting documentation will be available for review from **02 June until 02 August 2016** at the following locations:

- Hard copies of this application are available at the Koeberg Public Library (address: Merchant Walk, Duynfontein, Melkbosstrand.
Tel no.: 021 553 2514), Wesfleur Public library (address: Wesfleur Circle, Dassenberg, Atlantis.
Tel no.: 021 572 7618), Thusong Service Centre (address: 1 Nottingham Street, Sherwood Park, Atlantis.
Tel no.: 021 572 0289), Avondale Public Library (address: Civic Centre, Grosvenor Avenue, Atlantis.

Tel no.: 021 572 3529) and the KNPS Visitors Centre (address: Koeberg Nuclear Power Station, R27 off West Coast Road. Tel no.: 021 550 4667).

- Electronic copies will be made available on the following website and on request from the Environmental Assessment Practitioner listed below.
The Website: <https://public-wst.worleyparsons.com/sites/Africa/Environ/SitePages/Home.aspx>

Public Meeting

All Interested and Affected Parties are invited to attend the quarterly Koeberg Public Safety Information Forum (KPSIF) to be held on the **30 June 2016** at the Nuclear Auditorium, Bulk Stores, Koeberg Nuclear Power Station. The CWDP application will be presented at this KPSIF.

Queries and Formal Comments

Interested and Affected Parties with any queries and comments on the CWDP application are hereby requested to register and forward their comments to the contact person listed below **before Tuesday 02 August 2016**.

Advisian: Environmental Assessment Practitioner (EAP)

Advisian EAP: Kim Pontac
E-Mail Address: kim.pontac@advisian.com
Postal Address: P.O. Box 398, Bellville, 7535
Telephone Nr.: 021 912 3000
Facsimile Nr.: 021 912 3222



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In-store Promotion:
28 May - 26 June 2016

game
Game Canal Walk,
549, Canal Walk Centre,
Century City Dr, Cape Town, 7441

HIRSCH'S
Hirsch's Milnerton,
Racecourse Rd,
Cape Town, 7441

makro
Makro Montague Gardens,
37 Koeberg Rd,
Cape Town, 7435



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‘Obsessie met matriekuitslae skep meer werkloses’

Alet Janse van Rensburg

Kaapstad. – Die onderwysstelsel se “obsessie” met matriekuitslae dra by tot die koers waarteen leerlinge skool voor matriek verlaat – en dus ook tot werkloosheid, meen kenners.

“Die koers waarteen leerlinge skool voor matriek verlaat, voed die werkloosheidsprobleem in die land en niemand gee aandag hieraan nie. Dit is ’n voor die hand liggende gevolgtrekking,

maar tog geniet dit nie naastenby die aandag wat dit verdien nie. Ons kan dit nie langer ignoreer nie,” het Robyn Beere, direkteur van Inclusive Education South Africa, gister by ’n werkgroep oor die uitsakkoers in skole aan verteenwoordigers van die onderwyssektor gesê. Die werkgroep is deur die Katoelike parlementêre skakelkantoor gereël.

Sowat 34% van leerlinge in Suid-Afrika wat gr. 1 begin, vol-

tooi nie matriek nie. Nagenoeg die helfte van hulle val in die hoërskool uit. Die werkloosheidskoers onder die jeug was verlede jaar 63%.

Volgens Beere is dit geen wonder nie dat statistieke wys dat van diegene wat nie skool klaarmaak nie slegs 2% binne vyf jaar meer as R4 000 per maand sal verdien.

“Daar is ongelukkig ’n obsessie met matriekslaagsyfers in die land,” sê sy.

“Ons sal ander maatstawwe vir sukses moet ontwikkel. Ons moet die samelewing se houding teenoor die waarde wat ons aan tegniese en ambagsvaardighede heg, verander. Dit begin by ons ouers, gemeenskappe en skole.”

Volgens Farrell Hunt van die gemeenskapsorganisasie DVV International is ’n groot probleem hoe kinders van jongs af met die verkeerde verwagtinge grootgemaak word.

“As jy vir jong kinders vra

wat hulle eendag wil doen, is hul antwoord dat hulle brandbstryders of verpleërs wil word. Dan kom die samelewing en sê hulle moet belangrike werke kry waarmee hulle baie geld kan verdien, terwyl dit nie vir almal beskore is nie,” sê hy.

Een van die hoofredes waarom leerlinge skool verlaat, is omdat hulle voel hulle baat nie by die onderrig wat hulle ontvang nie. Nog ’n rede is die gebrek aan plek in skole.

“In Mitchells Plain neem die kinders ’n *gap*-jaar ná gr. 7, want hulle kry nie plek in ’n hoërskool naby hulle nie,” sê Ruschda O’Shea, hoof van die Hoërskool Tafelsig. “Ons het plek vir 950 leerlinge, maar het 1 200 leerlinge in die skool en daar is nog ’n waglys.”

O’Shea meen ’n skool moet ’n plek wees waar leerlinge ook oor ander lewensuitdagings moet leer en nie slegs akademies moet presteer nie.

GEBOU ONVEILIG VERKLAAR

Ouers probeer skool red

‘Wat as bendes skiet?’

Romantha Botha

Kaapstad. – Desperate ouers van Uitzig in die Kaap het die laaste paar dae sêlf verfrrollers gegryp en skouer aan die wiel gesit om hul skool te red.

Dit was nadat die Wes-Kaapse onderwysdepartement (WKOD) die skoolgebou van die Hoërskool Uitzig onveilig verklaar het.

“Ons kan nie bekostig dat ons kinders so ver van die huis af skoolgaan nie en waar dit net so gevaarlik is met bendes wat ontydig op mekaar begin skiet,” het Sharon Koeberg (47) gister gesê terwyl sy een van die klaskamers verf.

Die leerlinge van die skool gaan verskuif word na die Hoërskool Ravensmead, waar hulle vir die duur van die Junie-eksamen geakkommodeer word, het Paddy Atwell, WKOD-woordvoerder, gesê.

Volgens Koeberg sal ouers egter meer gerus wees as hul kinders in Uitzig skoolgaan.

“Hier ken ouers mekaar en kan die kinders darem in buurmense se huise gaan skuil as die bendes begin skiet. Waarheen hardloop hulle daar waar hulle ver van hul huise af gaan wees?”

Vier van haar kinders was in die Hoërskool Uitzig. Twee het daar gematrikuleer en twee het die skool vroeg verlaat. Haar



Jacqueline Majampa (31) verf ’n muur by die Hoërskool Uitzig, waar ouers sedert Vrydag werk in ’n poging om die skool te red. Die geboue is deur die Wes-Kaapse departement van onderwys onveilig verklaar.

Foto’s: JACO MARAIS

jongste seun het vanjaar met gr. 11 begin.

“Hoewel die verf niks aan die struktuur van die geboue kan verander nie, sal die skool darem beter lyk vir die eksamen, wat Donderdag begin.”

Ten tyde van *Die Burger* se besoek aan die skool was die skoolhoof, Charlie du Preez, nie daar nie. Hy was in verga-

derings.

Tony Ehrenreich, Wes-Kaapse sekretaris van Cosatu, en Adam Alexander, ’n plaaslike gemeenskapsleier, het glo aangebiet om die ouers by te staan en te help deur skeepsvraghouers en vensters te skenk wat as klaskamers benut kan word.

Volgens Atwell is die dak van die skool deur ingenieurs

onveilig verklaar. “Dit sluit in die vervalle toestand van die asbesdak, die geute en pype en skade aan die plafonne, vensters en muurpanele.”

By die Hoërskool Beauvallon in Valhalla Park het die skoolhoof, Dawid Lawn, gister gesê net sekere dele van die skool se geboue is onveilig verklaar, maar die leerlinge gaan nie



Een van die klaskamers van die Hoërskool Uitzig. Die skool se geboue is deur die Wes-Kaapse departement van onderwys onveilig verklaar.



Ons kan nie bekostig dat ons kinders so ver van die huis af skoolgaan nie.

— SHARON KOEBERG, ’N OUER

meer verskuif word nie. Hulle gaan die komende eksamen daar aflê.

Aan die agterkant van hierdie skool staan die raamwerk van ’n gebou – slegs die betonpilare, dak en balke – nadat die WKOD dit onveilig verklaar en van bruikbare materiaal gestroop het.

Attwell het egter gister volgehou dat ouers en leerlinge geweier het om te skuif ondanks die waarskuwings dat die geboue onveilig is.



David Lawn, hoof van die Hoërskool Beauvallon in Valhalla Park, staan voor een van die geboue wat ook deur die Wes-Kaapse onderwysdepartement onveilig verklaar is.

Polisie vra hulp om 13-jarige se twee verkragters vas te trek

Kaapstad. – Die polisie in Mfuleni het die publiek se hulp gevra om twee mans wat verlede week ’n 13-jarige meisie verkrag en aange-rand het aan te keer.

Die meisie is verlede Woensdag

omstreeks 07:45 in haar ouerhuis in die informele nedersetting Shukushukuma in Mfuleni aangeval en verkrag, het konst. Noloyiso Rwe-xana, ’n polisiewoordvoerder, gesê.

Luidens berigte is die meisie aan-

gerand en met ’n vuurwapen oor die kop geslaan. Sy was glo alleen tuis en het reggemaak vir skool toe sy aangeval is. Sy sterf tans in die hospitaal aan.

“Niemand is nog aangekeer nie.

Enigeen wat meer inligting het wat tot die inhegtenisneming van die mans kan lei, kan die polisie se tol-vrye nommer by 08600 10111 ska-kel,” het Rwe-xana gesê. — **Shantel Moses**

KENNISGEWING VAN AANSOEK OM ’N KUSWATERS AFVOER PERMIT VIR DIE KOEBERG KERNKRAGSTASIE INGEVOLGE ARTIKEL 69 VAN DIE WET OP GEÏNTEGREERDE KUSBESTUUR (WET NO. 24 VAN 2008)

AANSOEK-VERWYSINGSNOMMER: 2012/011/WC/KOEBERG POWER STATION

Kennis geskied hiermee ingevolge Artikel 69 van die Wet op Nasionale Omgewingsbestuur: Geïntegreerde Kusbestuur Wet, 2008 dat die aansoeker naamlik Eskom Holdings SOC Beperk aansoek doen vir ’n kuswaters afvoer permit (KWAP) van die Departement van Omgewingsake (Oseane en Kusgebiede) vir ontslag uit die Koeborg Kernkragstasie (KKKS) geleë op die plaas Duynfontyn 1552.

Die KKKS is ongeveer 30 km noord van Kaapstad geleë, naby Melkbosstrand aan die Weskus van Suid-Afrika. Hierdie aansoek vir ’n KWAP is vir die vrystelling van industriële en huishoudelike uitvloei-sel van die kragstasie, via die bestaande Koeborg Koeborg verkoelingswater uitlaat-kanaal geleë op die suidwestelike gedeelte van die aanleg.

KONSEP KUSWATERS ONTSLAG PERMIT AANSOEK BESKIKBAAR VIR INSAE

Die KWAP konsepaansoek en tersakelike dokumente sal vanaf **2 Junie tot 2 Augustus 2016** op die volgende plekke vir insae beskikbaar wees:

- Gedrukte afskrifte van hierdie aansoek is beskikbaar in die Koeborg openbare biblioteek (adres: Merchant Walk, Duynfontein, Melkbosstrand, telefoonnommer: 021 553 2514), Wesfleur openbare biblioteek (adres: Wesfleursirkel, Dassenberg, Atlantis, telefoonnommer: 021 572 7618), Thusong Dienssentrum (adres: 1 Nottinghamstraat, Sherwood Park, Atlantis, telefoonnommer: 021 572 0289), Avondale Openbare Biblioteek (adres: Civic Centre, Grosvenorlaan, Atlantis, telefoonnommer: 021 572 3529), en die Koeborg Besoekerssentrum (adres: Koeborg Kernkragstasie, R27 Weskus Pad, telefoonnommer: 021 550 4667).
- Elektroniese weergawe van hierdie aansoek op die webwerf en op aanvraag by die Omgewingsaanslagpraktisyn hieronder aangedui. Webwerf: <https://public-wst.worleyparsons.com/sites/Africa/Environ/SitePages/Home.aspx>

OPENBARE VERGADERING

Partye wat hierin belang het, asook partye wat hierdeur geraak word, word uitgenooi om die kwartaallikse Openbare Veiligheidsinligtingsforum (beter bekend as die PSIF) by te woon op **30 Junie 2016** in die Koeborg Besoekerssentrum, Koeborg Kernkragstasie. Hierdie KWAP konsepaansoek sal, onder andere, op hierdie forum bespreek word.

NAVRAE EN FORMELE KOMMENTAAR

Partye wat hierin belang het, asook partye wat hierdeur geraak word, kan navrae en kommentaar rakende hierdie KWAP konsepaansoek rig aan die kontakpersoon hieronder aangetoon. Geen kommentaar sal na **2 Augustus 2016** aanvaar word nie.

Advisian: Omgewingsaanslagpraktisyn (OAP)

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Telefoonnommer: 021 912 3000
Fax No: 021 912 3222



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Op DStv-kanaal 147

JOU STORIE MET *Nina*

Diep-dinge-gesels *via* Nina-sonder-fieterjasies

Woensdae 17:30

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Janice Alexander won the clubs Best Player of the Year Award for her outstanding performance during the past season. PHOTO: ROWLAND HERMANUS

Baggy Blues' best players awarded

ROWLAND HERMANUS

Atlantis Cricket Club (Baggy Blues) held their Annual Awards Evening on Friday 27 May at Robinvale Sportsfield. For the first time in the 36-year-history of the club a female player was named Player of the Year.

Janice Alexander scored 500 runs this past season, which includes two centuries and will attend the Western Province Woman Winter Cricket League training camp.

Other winners were:
Ladies Bowler of the Year: Mckyle van Schalkwyk
Ladies Batter of the Year: Janice Alexander

Third Team Batsman of the Year: Garth Arendse.
Third Team Batsman of the Year: Angelo Moses

Second Team Bowler of the Year: Aziz Adams
Second Team Batsman of the Year: Jaseen de Jongh

First Team Bowler of the Year: Franklin Sampie
First Team Batsman of the Year: Rodger August

First Team One Day Player of the Year: Shane Summers
Ama-20 Player of the Year: Krisnan Oosthuizen

Young Player of the Year: Devon Smith
Most Improved Player: Marco Cloete

Players' Player of the Year: Devon Smith
Supporter of the Year: Neil August

Player of the Year: Janice Alexander
Sportsman of the Year: Jason Margerman.

Young Hearts is tans die enigste span in sy liga wat ná nege wedstryde steeds onoorwonne is .

FOTO: JOLINE VAN DER MERWE



Young Hearts steeds bo-aan punteleer

HILTON ZIBEON

Die afgelope Saterdag 11 Junie het Young Hearts sy onoorwonne status voortgesit toe hy Zebras van Piketberg met 'n telling van 144-6 op hul tuisveld in Pella, vermosel het.

Die besoekers het net in die eerste vyf minute so bietjie saamgespeel , daarna was dit net 'n eenloopstraat. Dit was ook Pella se laaste wedstryd in die eerste rondte.

Barry Adonis (4), Lucianno Macelli (2), Mozeen Davids (2), Gilmore Solomons (3), Serano Geduld, Bernard Snell, Francois Jacobs, Gurston Apollis, Ricardo Geduld (2), Luaan Schip-

pers, Quan Appollis, Jade Solomons (3) het Pella se drieë behaal.

Snell (7), Schippers en Solomons (9) het doelskoppe aangeteken. Saterdag 4 Junie het ons ook gesien hoe die span van Pella hul outoriteit afstempel in die Boland-streekuitdaag-kompetisie. Young Hearts is tans die enigste span in sy liga wat steeds ná nege wedstryde onoorwonne is en lê hulle gemaklik bo-aan die punteleer met Langebaan die naasbestes in dié liga.

Die wedstryd het goed begin vir die tuisspan en hulle het twee vinnige drieë kort ná afskop gaan druk, maar kon slegs met een doelskop slaag. Paternoster het geantwoord met drie straffoele. Die rustydtelling was 19 - 9.

'n Pluimpie moet ook aan Young Hearts se afrigtingspan gegee word, want dit is tóe dat die spelers se fiksheid en kondisionering deurgedring het. Hulle is uiteindelik beloon met 'n addisionele vyf drieë en het sodoende ook 'n bonuspunt vir die tuisspan verseker.

Die middelveld het ook hul bydrae gelewer en het een drie elk gedruk om die eindtelling 54 - 21 in die guns van Young Hearts te laat. Puntemakers vir Young Hearts: drieë: Bernard Snell, Luciano Marcelli, Anthony Williams, Mozeen Davids, Barry Adonis (2) en Jade Solomons (2).

Doelskoppe: Jade Solomons (7). Pella is eers weer op 25 Junie in aksie wanneer hulle teen Dassenberg op Pella te stand kom.

KENNISGEWING VAN AANSOEK OM 'N KUSWATERS AFVOER PERMIT VIR DIE KOEBERG KERNKRAGSTASIE INGEVOLGE ARTIKEL 69 VAN DIE WET OP GEÏNTEGREERDE KUSBESTUUR (WET NO. 24 VAN 2008)

AANSOEK-VERWYSINGSNOMMER: 2012/011/WC/KOEBERG POWER STATION

Kennis geskied hiermee ingevolge Artikel 69 van die Wet op Nasionale Omgewingsbestuur: Geïntegreerde Kusbestuur Wet, 2008 dat die aansoeker naamlik Eskom Holdings SOC Beperk aansoek doen vir 'n kuswaters afvoer permit (KWAP) van die Departement van Omgewingsake (Oseane en Kusgebiede) vir ontslag uit die Koeberg Kernkragstasie (KKKS) geleë op die plaas Duynfontyn 1552.

Die KKKS is ongeveer 30 km noord van Kaapstad geleë, naby Melkbosstrand aan die Weskus van Suid-Afrika. Hierdie aansoek vir 'n KWAP is vir die vrystelling van industriële en huishoudelike uitvloeisel van die kragstasie, via die bestaande Koeberg verkoelingswater uitlaat-kanaal geleë op die suidwestelike gedeelte van die aanleg .

KONSEP KUSWATERS ONTSLAG PERMIT AANSOEK BESKIKBAAR VIR INSAE

Die KWAP konsepaansoek en tersakelike dokumente sal vanaf **2 Junie tot 2 Augustus 2016** op die volgende plekke vir insae beskikbaar wees:

- Gedrukte afskrifte van hierdie aansoek is beskikbaar in die Koeberg openbare biblioteek (adres: Merchant Walk, Duynfontein, Melkbosstrand, telefoonnommer: 021 553 2514), Wesfleur openbare biblioteek (adres: Wesfleursirkel, Dassenberg, Atlantis, telefoonnommer: 021 572 7618), Thusong Dienssentrum (adres: 1 Nottinghamstraat, Sherwood Park, Atlantis, telefoonnommer: 021 572 0289), Avondale Openbare Biblioteek (adres: Civic Centre, Grosvenorlaan, Atlantis, telefoonnommer: 021 572 3529), en die Koeberg Besoekerssentrum (adres: Koeberg Kernkragstasie, R27 Weskus Pad, telefoonnommer: 021 550 4667).

- Elektroniese weergawe van hierdie aansoek op die webwerf en op aanvraag by die Omgewingsaanslagpraktisyn hieronder aangedui.
Webwerf: <https://public-wst.worleyparsons.com/sites/AfricaEnviron/SitePages/Home.aspx>

OPENBARE VERGADERING

Partye wat hierin belang het, asook partye wat hierdeur geraak word, word uitgenooi om die kwartaalike Openbare Veiligheidsinligtingsforum (beter bekend as die PSIF) by te woon op **30 Junie 2016** in die Koeberg Besoekerssentrum, Koeberg Kernkragstasie. Hierdie KWAP konsepaansoek sal, onder andere, op hierdie forum bespreek word.

NAVRAE EN FORMELE KOMMENTAAR

Partye wat hierin belang het, asook partye wat hierdeur geraak word, kan navrae en kommentaar rakende hierdie KWAP konsepaansoek rig aan die kontakpersoon hieronder aangetoon. Geen kommentaar sal na **2 Augustus 2016** aanvaar word nie.

Adviesian: Omgewingsaanslagpraktisyn (OAP)

Adviesian OAP: Kim Pontac
E-pos Adres: kim.pontac@adviesian.com
Posadres: Posbus 398, Bellville, 7535
Telefoonnommer: 021 912 3000
Fax No: 021 912 3222



WorleyParsons RSA (Pty) Ltd trading as Advisian
REG NO: 1989/002048/07

EcoNomics™

Tickets available for Spurs' annual langarm dance

Robinvale Spurs will be having their annual Langarm dance at the Robinvale Sportsfield Hall on Friday 1 July. The band All Sounds will perform and your ticket of R120 includes a meal. Come and enjoy a night of fun and dancing.

For more information please contact Grant Gertse on 076 203 8832 or Jerome February on 083 440 5205.

NUUS

Have your say on Koeberg discharge

Deur **Monique Duval @Monique_Duval** | 06 Julie 2016 06:00

Residents have just under a month to have their say on the draft coastal waters discharge permit for the Koeberg Nuclear Power Station (KNPS).

This application seeks permission for the discharge of industrial and domestic effluent generated at the power station through the existing Koeberg Cooling Water Outfall basin.

Speaking during the quarterly Koeberg Safety Information Forum meeting last week, Kim Pontac, an environmental practitioner from Advisian, explained this is not a new discharge activity.

She said these discharges into the ocean form part of the normal operations of the plant and an existing authorisation for the discharge has been in place since the plant was commissioned in the 1980s.

Pontac said due to changes in legislation the authorisation shift from the water affairs to environmental departments and a new application was required.

She said even though radiological releases from the plant did not form part of the Integrated Coastal Management Act, the team felt it was best to include it in the public participation process to provide a holistic view.

Pontac said they also noted that the Act did not make provision for public participation but a recommendation from the team was to have a period where interested residents could make comment. Public participation opened on Thursday 2 June and will close on Tuesday 2 August.

SKAKELS

team is now in phase two which consists of the public participation where various reports are circulated.

So why does KNPS require a permit?

Pontac says in terms of the Act, there are two items namely the chemical make-up of the effluent discharged as well as the temperature.

“Essentially Koeberg triggers both of those thresholds. In terms of normal operations, the plant pulls in water from the intake basin and discharges via the outfall basin. There are various domestic and industrial effluents also discharged through the outfall basin and what is important is that these two effluents are separated from each other so they

HOOFTREKKE

GEWILDSTE

Nuwe nommerplate vir SA beplan

‘Verkiesing ’n keerpunt vir SA’

Werker van insleepdiens in Namibië vermis

Wimbledon: Polisie ondersoek vergiftiging

Apteeckman se motorfiets gekaap

KONTAK



KLIK HIER

NETWERK24 Stemme

Henry Jeffreys

Rubriekskrywer

Henry Jeffreys is 'n politieke kommentator en voormalige redakteur van Die Burger.



Henry Jeffreys:
Dié meulsteen
lees ANC-leiers

Henry Jeffreys:
Nommer Een se
groot toets

ALLE REGTE VOORBEHOU © 2016 MEDIA24



MANS

VROUE

don't mix."

She used a diagram to illustrate the workings of the power station and explained there were three different water systems being the primary, secondary and tertiary routes.

V Email kim.pontac@advisian.com for more.

MyStem: Het jy meer op die hart?

Stuur jou mening van 300 woorde of minder na MyStem@netwerk24.com en ons sal dit vir publikasie oorweeg. Onthou om jou naam en van, 'n kop-en-skouers foto en jou dorp of stad in te sluit.

Ons kommentaarbeleid

Netwerk24 ondersteun 'n intelligente, oop gesprek en waardeer sinvolle bydraes deur ons lesers. Lewer hier kommentaar wat relevant is tot die onderwerp van die artikel. Jou mening is vir ons belangrik en kan verdere menings of ondersoeke stimuleer. Geldige kritiek en meningsverskille is aanvaarbaar, maar hierdie is nie 'n platform vir haatspraak of persoonlike aanvalle nie. Kommentaar wat irrelevant, onnodig aggressief of beledigend is, sal verwyder word. Lees ons volledige kommentaarbeleid [hier](#)

MELD AAN of **REGISTREER** om kommentaar te lewer. Dit neem net twee minute!

We were unable to load Disqus. If you are a moderator please see our [troubleshooting guide](#).

Comments for this thread are now closed.

0 Reaksies

Netwerk24

Teken in

Recommend

Deel

Rangskik volgens Beste

This discussion has been closed.



phmor
N kalm teddie beer wat hou van oefen , fliek/series kyk, musiek luister, lees, kook (nie professioneel nie) , natuur, braai , saam vriende

Sien die Profiel



Explorer69
Die lewe is n avontuur en nie n plig nie. om n verskil te maak dryf jou in alle omstandighede VS geld wat net tydelik is

Sien die Profiel



Louis26
Ek is n baie vriendelike mens. Ek hou van die buite lewe. Ek hou van visvang. Ek het n goeie werk. En ek is baie committed person.

Sien die Profiel

Wys Meer

SOEK



Advisian

WorleyParsons Group

Appendix B Executive Summary





EXECUTIVE SUMMARY:

COASTAL WATERS DISCHARGE PERMIT APPLICATION FOR THE EXISTING DISCHARGE VIA THE COOLING WATER OUTLET BASIN, AT KOEBERG NUCLEAR POWER STATION

MAY 2016

DEA: OCEANS & COASTS Ref Number: 2012/011/WC/Koeberg Power Station

1 INTRODUCTION

An application in terms of Section 69 of the National Environmental Management: Integrated Coastal Management Act (NEM: ICMA), Act 24 of 2008 for a Coastal Waters Discharge Permit (CWDP) has been made by Eskom for the discharge emanating from Koeberg Nuclear Power Station (KNPS).

The discharge activity is associated with the operation of the power station, which utilises large volumes of seawater for cooling purposes. In addition to the cooling water discharge, industrial and domestic effluent is produced and is discharged along with the cooling water via the Koeberg cooling water outlet basin (KCWOB), which is situated south of the Koeberg cooling water intake basin (KCWIB), as shown in Figure 1.

KNPS has an existing statutory approval for the discharge activity. Through the promulgation of the NEM: ICMA in 2008, this Act has since repealed those provisions in terms of marine discharges, and therefore KNPS is required to apply for a CWDP in terms of the NEM: ICMA. A technical assessment report has been drafted and supporting specialist studies have been conducted in support of this application

Advisian, a WorleyParsons (Pty) Ltd. Group, has been appointed by Eskom to undertake the associated Public Participation Process.

See page 5 for details about how you can participate in the process.

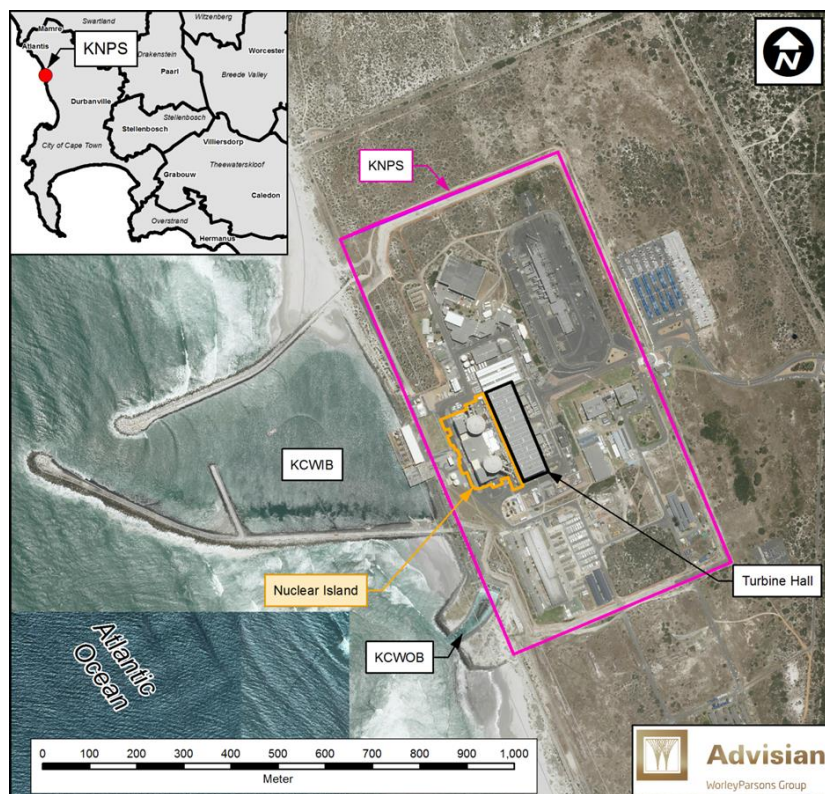


Figure 1: Locality Map

2 GOVERNANCE FRAMEWORK

KNPS has an existing statutory approval for the discharge activity (Permit 853N, Exemption 1133B) in terms of the Water Act (WA), Act 54 of 1956. This authorisation was issued on 17 July 1985 by the Department of Water Affairs, who at the time was the competent authority responsible for the governance of coastal water discharge under the relevant WA.

In terms of the transitional provisions of the National Water Act (NWA), Act 36 of 1998, the 853N permit is an existing lawful use and therefore valid in terms of this Act.

In 2008, the NEM: ICMA, was promulgated in order to improve the conservation and sustainable management of the South African coastal environment. Mandates in terms of marine discharges have been transferred from the Department of Water Affairs to the Department of Environmental Affairs: Oceans and Coasts (referred to as DEA). In light of the relevant statute change, KNPS is required to apply for a Coastal Waters Discharge Permit in terms of the NEM: ICMA, Section 69.

Section 69(3) of the said Act, states: *“Any person who wishes to discharge effluent into coastal waters in circumstances that are not authorised under a general authorisation referred to in subsection (2) must apply to the Department for a coastal water discharge permit.”*

The definition of effluent (in accordance with NEM: ICMA): (a) any liquid discharged into the coastal environment as waste, and includes any substance dissolved or suspended in the liquid; or (b) liquid which is of a different temperature from the receiving body of water. In this instance KNPS triggers the threshold both in terms of discharge and characterisation of the effluent.

The focus of this application is on the non-radioactive liquid effluent discharge, since effluent containing radioactive contaminants is governed by the National Nuclear Regulatory Act, 1999 (NNRA) (Act No. 47 of 1999) and regulated by the National Nuclear

Regulator (NNR). The nuclear regulations are administered by the Department of Energy.

KNPS has the necessary statutory approvals for the discharge of radioactive liquid releases in terms of Section 21 of the NNRA (Act No. 47 of 1999), as well as the approvals required for a sea-shore lease in terms of Section 3(1) of the Seashore Act, (Act No. 21 of 1935).

3 CWDP APPLICATION PROCESS

This CWDP application has been prepared using the following guidance documents:

- National Guideline for the Discharge of Effluent From Land-based Sources into the Coastal Environment (DEA, 2014)
- Assessment Framework for the Management of Effluent from Land-based Sources Discharged to the Marine Environment (DEA, 2015);
- Generic Assessment Criteria for Coastal Waters Discharge Permits (DEA, 2014); and
- Guideline on Public Participation Requirements for a Coastal Waters Discharge Permit Application (DEA, 2014).

The aforementioned guideline documents define the approach to the CWDP application process and the associated public participation process. See Figure 2 for a simplified flow diagram of the proposed CWDP process.

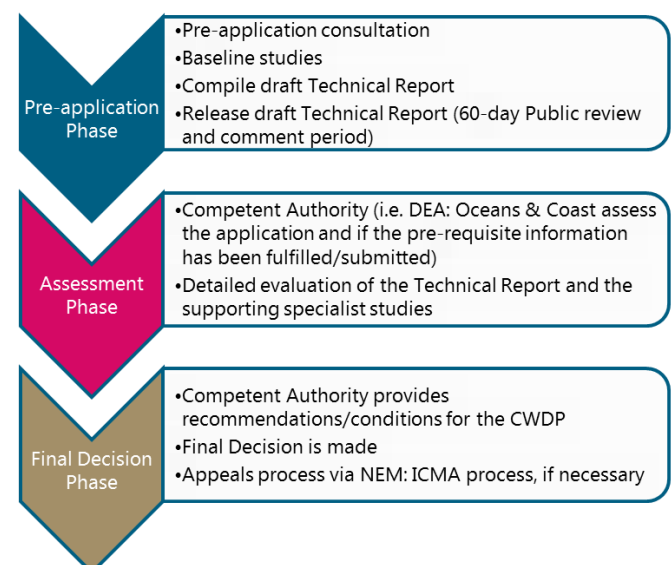


Figure 2: Simplified CWDP Process

The objectives of the Public Participation Process are to:

- To identify and notify the relevant Interested and Affected Parties of the proposed project;
- To address any environmental or social concerns and issues which may arise as a result of the proposed project;
- To provide stakeholders the opportunity to voice any concern related to the project; and
- To provide stakeholders the opportunity to review and provide feedback on the specialist studies to ensure that the identified issues are adequately and suitably addressed.

Once the public participation process has been completed, all the comments and concerns will be addressed in the technical report, after which the final report will be submitted to the DEA for final review and approval.

4 DESCRIPTION OF THE SITE AND ENVIRONMENT

KNPS is located on Cape Farm Duynefontyn No. 1552, approximately 30 km north of Cape Town, near Melkbosstrand on the West Coast of South Africa. Access to KNPS is via the R27 or alternatively via Otto du Plessis Drive.

KNPS is situated in an area near the southern limit of the relatively uniform Namaqua marine biogeographic region. This area is dominated by the cold Benguela current system, in which the upwelling of cool nutrient-rich waters results in high biological productivity. However, this coast is characterised by low species richness and low endemism. There are no identified areas of special conservation for marine mammals, invertebrates or fish within the immediate vicinity of KNPS.

The two 900 MWe (megawatts electrical) nuclear reactors apply the direct or once-through cooling water system, where cooling water is drawn from the Atlantic Ocean, passed through the various industrial processes on site and returned to the sea with a temperature ~11°C above that abstracted.

The discharge is via the Koeberg Cooling Water Outlet Basin (KCWOB), which is situated in the southwestern portion of the property. The KCWOB consists of a concrete channel approximately 150 m long, initiating on land, and discharging into the sea at a depth of approximately -2 m Chart Datum. The design of the channel and the magnitude of the effluent discharged (~86 m³/s) inhibit the flow of ambient seawater back into the KCWOB, and therefore the discharge location is considered to be at the end of the channel. The coordinates of the discharge location are 33°40'50.18"S 18°25'50.45"E (GCP).

5 NEED AND DESIRABILITY OF THE EFFLUENT DISCHARGE

KNPS has been in commercial operation since 1984. The disposal of land-derived effluent into coastal waters was previously authorised by the Water Act of 1956 and this water use is an existing lawful use in terms of the National Water Act, 36 of 1998 (NWA).

With the promulgation of the NEM: ICMA, this Act has since repealed the NWA and as such a Coastal Waters Discharge Permit (CWDP) is required by KNPS. It is understood that the intention of the CWDP is to replace the marine discharge requirements that exist under the NWA; however the discharge operations at KNPS have been in compliance with the existing water permit and exemption recognised by the NWA.

6 ALTERNATIVES

Disposal options which avoid the need to discharge effluent to the coastal environment are limited due to the volume of waste water generated by the cooling water systems, and the chemical composition of the whole effluent.

Alternative one: The effluent could theoretically be discharged to sewer and treated at a municipal waste water treatment works (WWTW); however the large volume of cooling water abstracted from the sea is very saline and is not suitable for discharge into a water resource or a municipal WWTW.

Further to this, the effluent generated on site consists of concentrated waste products and is not best practice to re-use or discharge to a water resource or municipal WWTW. In fact it is best practice to rather dilute the effluent in the cooling water and in some cases also the sea to reduce the concentration to dosage levels safe for members of the public, workers, plants, and animals.

Based on the above reasoning, alternative one is considered not feasible and/ or reasonable, and has therefore been excluded.

Alternative two: *In situ* disposal method option includes the treatment of the effluent at KNPS WWTW and final discharge via irrigation on the property. However; this would require the existing 28 m³/h WWTW design capacity be upgraded (x11 000) to accommodate effluent volumes, and in addition, a desalination plant be constructed to remove the salt content of the water for irrigation purposes. This option would be prohibitively expensive, taking into consideration the remaining lifespan of the plant.

No-go Alternative: Entails not granting the CWDP for marine discharge. This alternative would mean the closure of the plant, as the discharge is associated with the operation of the power station. In the current South African energy context this alternative is not an option as KNPS plays an important role in supplementing the national grid with power. The cumulative impacts of this alternative would lead to reduced economic growth in the country due to an unstable power supply and the loss of jobs, not only at KNPS, but also within the broader market.

7 STAKEHOLDER ENGAGEMENT

Stakeholder engagement forms a key component of the CWDP process and is being undertaken in accordance with the guideline document on Public Participation Requirements for a Coastal Waters Discharge Permit Application (DEA, 2014).

The stakeholder engagement activities are summarised in Table 1.

Relevant local, provincial and national authorities, conservation bodies, local forums and surrounding landowners and occupants have been notified of the CWDP application process and the release of the Draft Technical Report for review and comment.

Table 1: Stakeholder engagement during Pre-Application and Scoping Phases

Pre-Application Phase	
Activity	Date
Advertise release of CWDP Application and Technical Report and commencement of I&AP registration	31 May 2016 – 1 June 2016
Public review and comment period (61 days)	2 June – 2 August 2016
Koeberg Public Safety Information Forum (KPSIF) Meeting Presentation	30 June 2016

Following submission of the draft application report to the DEA, the Technical Report, addressing issues raised during the Pre-Application Phase, will be amended and submitted for final decision.

8 POTENTIAL IMPACTS

The impacts of the marine discharge activity are mostly linked to the sensitivity of the receiving environment and proximity of receptors¹, the potential risks in an abnormal discharge and stakeholders' perceptions.

Based on the above considerations as well as the professional experience of the Environmental Assessment Team, the following potential negative impacts and potential benefits have been identified.

¹ *Ecological receptors includes any living organisms other than humans, the habitat which supports such organisms, or natural resources which could be adversely affected by environmental contaminations resulting by a release at or migration from a site. (Source: www.Eugris.info)*

The effects of the effluent discharge on the receiving environment: Temperature

The primary purpose of the cooling water abstracted is to act as a heat exchanger. The discharged water is therefore ~11°C higher than the abstracted water.

This type of discharge may generate chronic level effects on biota such as alterations in growth, metabolism, reproductions, production, and/or influence ecosystem level processes through, for example alterations of the amount of oxygen dissolved in sea water.

The effects of the effluent discharge on the receiving environment: Total residual oxidant

Dosing of the cooling water is essential to the maintenance of KNPS. The buildup of biofouling will reduce the overall efficiency of the plant, which may lead to an increase in environmental impacts, such as the generation of radioactive waste, for every unit of electricity produced. However, chlorine (or any of its primary derivatives) is naturally toxic to marine organisms.

The effects of the effluent discharge on the receiving environment: Phosphates

Phosphate is an industrial effluent constituent which potentially has negative effects on phytoplankton production, as nitrogen is a limiting nutrient in the southern Benguela ecoregion.

The effects of the effluent discharge on the receiving environment: Hydrazine

Kelp sporophytes which are located on rocky/reef substrata in the shallow subtidal zone of in the receiving water body are specifically vulnerable to the toxicity effects caused by hydrazine.

The effects of the effluent discharge on the receiving environment: Build-up of heavy metal concentrations in deposition areas

KNPS effluent discharge contains very low concentrations of heavy metals. Dissolved heavy metals can adsorb to suspended inorganic and organic particles in the water column and find their way to the seabed through sedimentation. Over time, sediment-heavy metal concentrations in these depositional areas can build up through continued supply, such as may be from a continuously operating discharge, e.g. KNPS, local remineralisation of organic matter and associated biogeochemical processes. This can generate heavy metal concentrations approaching those considered to cause toxicity effects in benthos with ecological consequences of modification to benthic communities.

9 PLAN OF STUDY FOR THE IMPACT ASSESSMENT

To address the potential issues and impacts identified thus far, the following **specialist studies** have been conducted:

- Marine Ecology Impact Study; and
- Dispersion Modelling Study.

Specialists have provided detailed baseline information and have identified and assessed the potential impacts of the effluent discharge within their particular field of study. Studies have been conducted in accordance with the guideline document *Generic Assessment Criteria for Coastal Waters Discharge Permits* (DEA, 2014).

In addition, specialists have identified practicable mitigation and optimisation measures to avoid or minimise potential negative impacts and/or enhance any benefits.

The specialist studies have been completed and the results have been collated into the Technical Report.

The CWDP application and the supporting Technical Report will be released for public comment through notifications to Interested and Affected Parties (I&APs). Key authorities will also be consulted as part of the process.

All comments received will be incorporated into a Comments and Responses Summary which will be appended to the Technical Report. The CWDP

Application and Technical Report will then be submitted to the DEA for their consideration in decision-making.

10 HOW CAN YOU PARTICIPATE IN THE EIA PROCESS?

The CWDP Application and the supporting Technical Report is not a final report and can be amended based on comments received from stakeholders. Stakeholders are therefore urged to participate:

REVIEW THE REPORT

Copies of the CWDP Application and the supporting Technical Report are available for public review at the following locations:

- Koeberg Public Library, Duynfontein;
- Wesfleur Public Library, Atlantis;
- Thusong Service Centre, Atlantis;
- Avondale Public Library, Atlantis;
- KNPS Visitors Centre; and
- Advisians' website: <https://public-wst.worleyparsons.com/sites/AfricaEnvironment/SitePages/Home.aspx>

I&APs are invited to comment, and/or to register on the project database. I&APs must provide their comments, together with their name, contact details (preferred method of notification, e.g. email), and an indication of any direct business, financial, personal, or other interest which they have in the application, to the contact person listed below, by **2 August 2016**.

Relevant Organs of State have been automatically registered as stakeholders. All other **persons must request in writing to be placed on the register, submit written comments, or attend meetings in order to be registered as stakeholders** and be included in future communication for the project.

REGISTER OR PROVIDE YOUR OPINION

Register or send written comment to:

Kim Pontac

Advisian

P.O. Box 398, Bellville, 7535

Tel: + 27 21 912 3000

Fax: +27 21 912 3222

Email: kim.pontac@advisian.com

Comments must reach Advisian no later than 2 August 2016 to be included in the Final Technical Report. Only registered I&APs will be notified of future opportunities to provide comments.



***‘n Afrikaanse weergawe van hierdie dokument is beskikbaar – kontak asseblief vir Advisian.
Le isiXhosa uguqulelo olu xwebhu luyafumaneka - nceda uqhagamshelane Advisian.***



UITVOERENDE OPSOMMING:

**KUSWATERS AFVOERPERMITAANSOEK VIR DIE BESTAANDE
AFVOER DEUR DIE VERKOELINGSWATER UITLAATKANAAL
BY KOEBERG-KERNKRAGSENTRALE**

MEI 2016

DOS: Oseane en Kusgebiede Verwysingsnommer: 2012/011/WC/Koeberg Power Station

1 INLEIDING

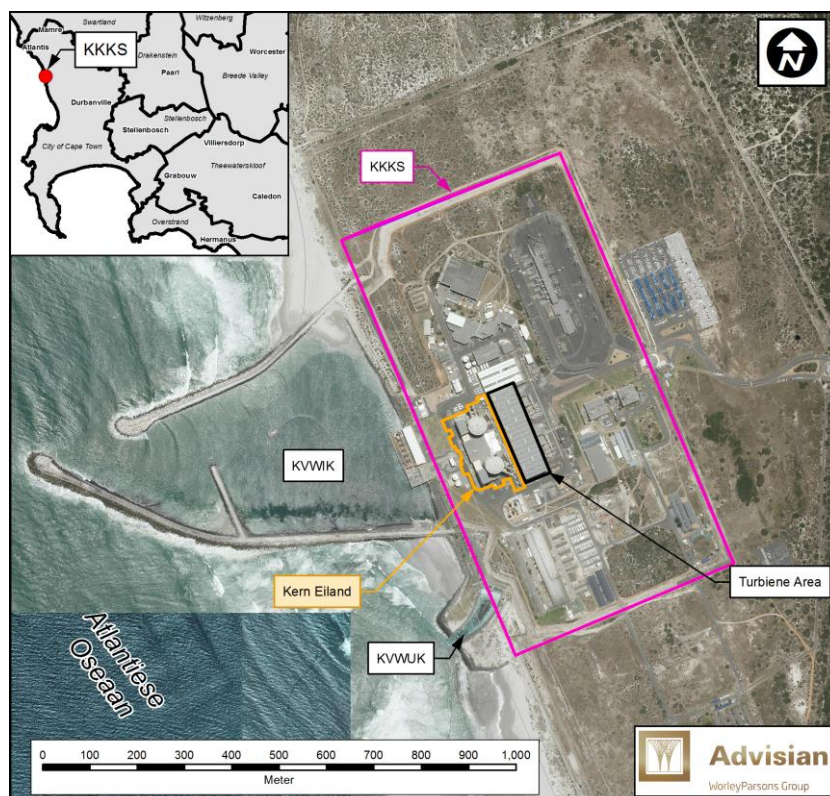
'n Aansoek kragtens Artikel 69 van die Wet op Nasionale Omgewingsbestuur: Geïntegreerde Kusbestuurswet (NOB: GKBW), Wet 24 van 2008, is gedoen deur ESKOM vir 'n permit vir die vrystelling van afvoerwater uit Koeberg Kernkragsentrale (KKKS) in die see.

Die vrystelling van afvoerwater is as gevolg van groot volumes seewater wat gebruik word vir die verkoeling van komponente van die kragsentrale. Industriële en huishoudelike afvoerwater word ook saam met die verkoelingswater afgevoer deur die Koeberg verkoelingswater uitlaat-kanaal. Laasgenoemde is geleë aan die suidwestelike grens van die Koeberg aanleg, soos aangedui in Figuur 1.

KKKS het tans statutêre goedkeuring vir die ontslag van afvalwater. Die promulgering van die NOB: GKBW in 2008 het egter die bepalings ten opsigte van die ontslag van afvalwater in kuswaters herroep. KKKS moet dus opnuut aansoek doen vir 'n kuswaters afvoerpermit (KWAP) kragtens NOB: GKBW. 'n Tegniese evalueringsverslag is opgestel en spesialisstudies is gedoen ter ondersteuning van hierdie aansoek.

Advisian, 'n WorleyParsons (Edms) Bpk Groep, is deur Eskom aangestel om die gepaardgaande publieke deelname-proses te onderneem.

**Verwys na bladsy 5 vir meer
inligting oor hoe u aan
die proses kan deelneem**



Figuur 1: Liggingskaart

2 BESTUURSRAAMWERK

KKKS beskik tans oor bestaande statutêre goedkeuring vir die ontslag (Permit 853N, Vrystelling 1133B) kragtens die Waterwet (WW), Wet 54 van 1956. Hierdie magtiging is uitgereik op 17 Julie 1985 deur die Departement van Waterwese, wat op daardie stadium die bevoegde en verantwoordelike owerheid verantwoordelik was vir die bestuur van kuswaterontslag kragtens die waterwet.

Kragtens die oorgangsbepalings van die Nasionale Waterwet (NWW), Wet 36 van 1998, is die 853N permit steeds geldig.

Die NOB: GKBW was in 2008 gepromulgeer met die doel om bewaring en volhoubare bestuur van die Suid-Afrikaanse kusomgewing te verbeter. Mandate vir kuswaterontslag is vanaf die Departement van Waterwese na die Departement van Omgewingsake: Oseane en Kusgebiede, hierna verwys as die "Departement" oorgedra. Die wetsverandering vereis dus die KKKS om aansoek te doen vir 'n KWAP kragtens NOB: GKBW, Artikel 69.

Artikel 69 (3) van die bogenoemde wet bepaal dat: *"Enige persoon wat uitvloeisel in kuswaters wil vrystel in omstandighede buite die gemagtigde algemene magtiging soos na verwys in subartikel (2), moet aansoek doen by die Departement vir 'n kuswater afvoerpermit."*

Die definisie van uitvloeisel (luidens NOB: GKBW) behels: (a) enige vloeistof wat in die kusomgewing vrygestel word, insluitend enige stowwe wat in die vloeistof opgelos of in suspensie is; of (b) 'n vloeistof met 'n ander temperatuur as dié van die ontvangende watermassa. Hierdie bepalings is dus relevant vir die KKKS-ontslag as gevolg van die inhoud en eienskappe van die ontslag.

Hierdie aansoek fokus op die vrylating van nie-radioaktiewe vloeistof. Uitvloeisel met 'n radioaktiewe inhoud word kragtens die Nasionale Kernregulerings Wet, 1999 (NKRW) (Wet No. 47 van 1999), geregleer deur die Nasionale Kernreguleerder (NKR). Die kern

regulasies word behartig deur die Departement van Energie.

KKKS beskik tans oor die nodige statutêre goedkeuring vir die vrylating van radioaktiewe vloeistof kragtens Artikel 21 van die NKRW (Wet No. 47 van 1999), asook die nodige goedkeuring vir 'n see-strand huurkontrak kragtens Artikel 3(1) van die Strandwet (Wet No. 21 van 1935).

3 KWAP AANSOEKPROSES

Hierdie KWAP aansoek is opgestel volgens die volgende riglyndokumente:

- "National Guideline for the Discharge of Effluent From Land-based Sources into the Coastal Environment (DEA, 2014)";
- "Assessment Framework for the Management of Effluent from Land-based Sources Discharged to the Marine Environment (DEA, 2015)";
- "Generic Assessment Criteria for Coastal Waters Discharge Permits (DEA, 2014)"; en
- "Guideline on Public Participation Requirements for a Coastal Waters Discharge Permit Application (DEA, 2014)".

Hierdie riglyndokumente definieer die KWAP-aansoekproses en gepaardgaande publieke deelnameproses. Figuur 2 is 'n vereenvoudigde vloeiagram van die voorgestelde KWAP proses.



Figuur 2: Vereenvoudigde KWAP Proses

Die doel van die publieke deelnameproses is om:

- belanghebbende en geaffekteerde partye van die projek te identifiseer en in te lig oor die projek;
- enige omgewings- of sosiale kwessies rondom die voorgestelde projek te oorweeg;
- belanghebbendes die geleentheid te bied om kwessies rondom die projek uit te lig; en
- belanghebbendes die geleentheid te bied om insae te hê in spesialisstudies om te bevestig dat kwessies wat uit gelig is voldoende aan te spreek.

Ná afloop van die publieke deelnameproses sal enige kommentaar en kwessies oorwee word in die tegniese verslag, waarna die finale verslag by die Departement ingedien sal word vir finale evaluasie en goedkeuring.

4 BESKRYWING VAN DIE LIGGING EN OMGEWING

KKKS is geleë op die Kaapse Plaas Duynfontyn No. 1552, ongeveer 30 km noord van Kaapstad, naby Melkbosstrand aan die Weskus van Suid-Afrika. KKKS is toeganklik deur middle van die R27 of Otto du Plessis-rylaan.

KKKS lê naby die suidelike grens van die relatief eenvormige Namakwa-Kuswaters biogeografiese streek. Hierdie gebied word oorheers deur die koue Benguela-seestroom, gekenmerk deur hoë biologiese produktiwiteit weens die opwelling van koel, voedingryke water. Tog beskik hierdie kus oor lae spesierikheid en lae endemiteit. Geen gebiede in die onmiddellike omgewing van KKKS is aangewys vir die spesiale bewaring van seesoogdiere, ongewerweldes of vispesies nie.

Die verkoelingsstelsels van die twee 900MWe (megawatt elektrisiteit) kernreaktors maak gebruik van koue water wat uit die Atlantiese Oseaan onttrek word, en dan deur die verskeie industriële prosesse op perseel sirkuleer word voordat dit weer in die oseaan vrygelaat word teen 'n temperatuur ongeveer 11°C hoër as toe dit onttrek was.

Die ontslag geskied deur die Koeberg verkoelingswater uitlaatkanaal (KVVUK), geleë naby

die suidwestelike grens van die aanleg. Die KVVUK bestaan uit 'n betonkanaal met 'n lengte van ongeveer 150 m wat op land begin en in die see uitvloei teen 'n diepte van ongeveer 2 m onder seevlak. Die ontwerp van die kanaal is sodanig dat seewater nie in die kanaal kan terugvloei nie. Die ligging van die ontslag is aan die eindpunt van die kanaal, by koördinate 33°40'50.18"S en 18°25'50.45"E (GCP).

5 BEHOEFTE AAN EN WENSLIKHEID VAN DIE ONTSLAG VAN UITVLOEISEL

KKKS word sedert 1984 kommersieël bedryf. Die ontslag in kuswater van uitvloeisel wat van die land afkomstige was voorheen deur die Waterwet van 1956 gemagtig. Hierdie magtiging ingevolge die Nasionale Waterwet, 36 van 1998 (NWW) is steeds van krag.

Met die promulgering van die NOB: GKBW is die NWW herroep, en derhalwe benodig KKKS 'n Kuswater Afvoerpermit (KWAP). Die doel van die KWAP is om die bepalings rondom kuswaters-afvoer onder die NWW te vervang; tot op hede het die ontslag by KKKS egter voldoen aan die vereistes van die bestaande water permit en vrystelling is erken deur die NWW.

6 ALTERNATIEWE

Weens die hoë volume afvalwater en die chemiese samestelling van die uitvloeisel, bestaan daar beperkte opsies vir ontslag van afvalwater anders as vrylating in die kusomgewing.

Alternatief 1: Die uitvloeisel kan vrygelaat word in die rioolstelsel en behandel word deur die munisipale rioolsuiweringsaanleg. Die groot volume verkoelingswater wat uit die see onttrek word het egter 'n hoë soutkonsentrasie, en is dus nie geskik vir vrylating in 'n waterhulpbron of munisipale rioolstelsel nie.

Daarby bevat die uitvloeisel gekonsentreerde afvalprodukte, en dit is nie goeie praktyk om sulke uitvloeisel weer te gebruik of vry te laat in 'n waterhulpbron of munisipale rioolstelsel nie. 'n Meer

gepaste praktyk is om die uitvloeisel in die verkoelingswater en in sommige gevalle ook die see te verdun na konsentrasievlakke wat veilig is vir lede van die publiek, werkers op die aanleg, plante, en diere is.

Weens die bogenoemde word alternatief 1 nie as haalbaar en/of redelik beskou nie, en word dus uitgesluit.

Alternatief 2: *In situ* ontslag behels die behandeling van uitvloeisel deur die KKKS se eie rioolsuiweringsaanleg en finale vrylating deur middel van besproeiing op die eiendom. Dit sal egter vereis dat die kapasiteit van die bestaande 28m³/h aanleg opgradeer moet word (x11 000) om die afvalwater te behandel. 'n Ontsoutingsaanleg sou ook opgerig moes word om die soutinhoud van die water vir besproeiings doeleindes te verwyder. Gegewe die oorblywende lewensduur van KKKS, is hierdie opsie nie finansieël geregverdig nie.

"Geen-Opsie" Alternatief: Dit veronderstel dat die aansoek vir 'n KWAP afgekeur word. Dit sal meebring dat die kragentrale gesluit moet word, aangesien die uitvloeisel die produk van 'n onmisbare proses in die bedryf van KKKS is. In die huidige Suid-Afrikaanse energie raamwerk, het KKKS 'n noodsaaklike verantwoordelikheid om die nasionale kragnetwerk aan te vul; hierdie alternatief is dus nie haalbaar nie. Die kumulatiewe impak hiervan sou lei tot 'n laer ekonomiese groei in die land as gevolg van 'n onstabiele kragbron, asook die verlies van werkseleenthede.

7 PUBLIEKE DEELNAME

Publieke deelname vorm 'n belangrike komponent van die KWAP-proses en word onderneem op grond van die "Guideline on Public Participation Requirements for a Coastal Waters Discharge Permit Application (DEA, 2014)".

Die publieke deelnameproses word in Tabel 1 opgesom.

Betrokke plaaslike, provinsiale en nasionale owerhede, bewaringsinstansies, plaaslike forums en omliggende grondeienaars en bewoners is in kennis gestel van die KWAP aansoek-proses, sowel as die vrystelling van die Konsep Tegnieiese Verslag vir oorsig en kommentaar.

Tabel 1: Publieke deelname tydens die Voor-aansoek- en Omvangsbepalingfases

Voor-aansoekfase	
Aktiwiteit	Datum
Adverteer vrystelling van KWAP Aansoek en Tegnieiese Verslag en begin van B&GP registrasie	31 Mei 2016 – 1 Junie 2016
Publieke oorsig en kommentaar periode (61 dae)	2 Junie – 2 Augustus 2016
Voorlegging aan Koeberg Openbare Veiligheid Inligting Forum Vergadering	30 Junie 2016

Nadat die konsep-aansoekverslag by die Departement ingedien is, sal die Tegnieiese Verslag, wat alle kwessies aanspreek wat uitgelig is tydens die voor-aansoek fase, gewysig word en vir finale besluit voorgelê word.

8 POTENSIËLE IMPAK

Die impak van die kuswater-ontslag is grotendeels gekoppel aan die sensitiwiteit van die omgewing waarin die ontslag geskied en aanwesigheid van reseptors¹, die potensiële risiko van abnormale uitvloeisel, en die persepsies van belanghebbendes.

Weens die bogenoemde oorwegings, asook die professionele ervaring van die Omgewingsbepaling-span, is die volgende potensiële negatiewe impakte en voordele uitgewys.

¹ *Ekologiese reseptors behels enige lewende organismes (buiten mense), die habitat wat sulke organismes ondersteun, sowel as natuurlike hulpbronne wat nadelig beïnvloed kan word deur omgewingsbesoedeling weens afvoer van 'n aanleg.*

Die impak van die uitvloeisel op die omgewing: Temperatuur

Koue water word onttrek met die primêre doel om te dien as hittewisselaar. Dit beteken dat die water wat vrygestel word ongeveer 11°C warmer is as die water wat onttrek word.

Hierdie soort vrylating kan veranderinge in groei, metabolisme, voortplanting en produksie op 'n chroniese vlak in biota tot gevolg hê. Dit kan ook 'n invloed op ekosisteevlak prosesse hê, bv. veranderinge in die konsentrasie van opgeloste suurstof in seewater.

Die impak van die uitvloeisel op die omgewing: Totale oorblywende oksidante

Die byvoeging van ontsmetmiddels soos chloor is noodsaaklik vir die instandhouding van KKKS. Chloor verhoed die opbou van biologiese besmetting wat 'n afname in die algehele doeltreffendheid van die aanleg sou veroorsaak. Verlaagde doeltreffendheid sou lei tot 'n toename in algehele impak op die omgewing, bv. deur meer radioaktiewe afval te vervaardig vir elke eenheid van elektrisiteit wat opgewek word. Ontsmetmiddels soos chloor en enige soortgelyke chemikalieë kan die seelewe vergiftig.

Die impak van die uitvloeisel op die omgewing: Fosfate

Fosfaat is 'n bestanddeel van nywerheids-uitvloeisel. Omdat stikstof 'n beperkende voedingstof in die Benguela-ekostreek is, kan fosfate 'n negatiewe effek op plantaardige plankton hê.

Die gevolge van die uitvloeisel op die omgewing: Hidrasien

Sporofiete van seewier, wat voorkom op die rotsagtige/rif substrata in die vlak subgety sone van die ontvangende water-massa, is besonder kwesbaar vir die giftige effek van hidrasien.

Die gevolge van die uitvloeisel op die omgewing: Opbou van swaarmetaal konsentrasies in afsettingsgebiede

Die uitvloeisel vrygelaat bevat 'n lae konsentrasie swaarmetale. Opgeloste swaarmetale verbind aan anorganiese en organiese deeltjies in die water, en versamel dus as 'n neerslag op die seabodem. Aanhoudende toevoeging van swaarmetaal-belaaide sediment kan lei tot plaaslike hermineralisering van organiese materiaal, asook die gepaardgaande bio-geochemiese prosesse. Met tyd, kan dit lei tot die opbou van swaarmetaal-konsentrasies tot 'n vlak waar dit toksies is vir organismes op die seabodem en gevolglik die ekologiese balans in gemeenskappe van sulke organismes versteur.

9 STUDIEPLAN VIR IMPAK-BEPALING

Die volgende **spesialisstudies** is gedoen om die potensiële kwessies en impakte wat tot op hede uitgelig is te verwerk:

- Marine Ekologiese Impakstudie; en
- Verspreidings-modellering studie.

Spesialiste het omvattende inligting verskaf oor die huidige toestande, sowel as die moontlike impak van die uitvloeisel binne hul bepaalde studierigtings uitgewys en oorweeg. Die studies is uitgevoer in ooreenstemming met die riglyndokument "*Generic Assessment Criteria for Coastal Waters Discharge Permits* (DEA, 2014)".

Spesialiste het ook praktiese maatreëls aangevoer om die negatiewe impakte te voorkom of grootliks te beperk, en om enige positiewe impakte ten volle te benut.

Die bogenoemde studies is voltooi en die resultate is vervat in die Tegniese Verslag.

Die KWAP-aansoek en die ondersteunende tegniese verslag sal beskikbaar gestel word vir publieke kommentaar deur kennisgewings aan belanghebbende en geaffekteerde partye (B&GP) te rig. Die tersaaklike owerhede sal ook tydens hierdie proses geraadpleeg word.

Alle kommentaar ontvang sal vervat word in 'n Opsommende Kommentaar en Antwoord Verslag wat aan die Tegniese Verslag geheg sal word. Die KWAP-aansoek en Tegniese Verslag sal daarna aan die Departement vir oorweging en besluitneming voorgelê word.

Betrokke staatsinstansies is outomaties geregistreer as belanghebbendes. Alle ander **persone moet skriftelik aansoek doen om by die register ingesluit te word, of moet skriftelik kommentaar lewer of vergaderings bywoon om as belanghebbendes geregistreer te word** en ingesluit te word by toekomstige kommunikasie rakende die projek.

10 HOE KAN U DEELNEEM AAN DIE IMPAKBEPALING-PROSES?

Die KWAP-aansoek en die ondersteunende tegniese verslae is nie finale dokumente nie en kan gewysig word ingevolge kommentaar wat ontvang van belanghebbendes vervang word. Belanghebbendes word dus aangemoedig om aan die proses deel te neem.

BESTUDEER DIE VERSLAG

Afskrifte van die bogenoemde is beskikbaar by:

- Koeberg Openbare Biblioteek, Duynefontein;
- Wesfleur Openbare Biblioteek, Atlantis;
- Thusong Dienssentrum, Atlantis;
- Avondale Openbare Biblioteek, Atlantis;
- KKKS Besoekersentrum; en
- Advisian webwerf: <https://public-wst.worleyparsons.com/sites/AfricaEnvironment/SitePages/Home.aspx>

B&GP's word genooi om kommentaar te lewer en/of te registreer op die projek se databasis. B&GP's moet tesame met hul kommentaar ook hul naam en kontakbesonderhede verskaf. Hulle moet ook aandui wat hul voorkeur-metode van kennisgewing is (bv e-pos), en of hulle enige direkte sake, finansiële, persoonlike of ander belange by die aansoek het. Skriftelike kommunikasie moet die onderstaande kontakpersoon bereik voor of op **2 Augustus 2016**.

REGISTREER OF LEWER JOU KOMMENTAAR

Registreer of stuur skriftelike kommentaar aan:

Kim Pontac

Advisian

Posbus 398, Bellville, 7535

Tel: + 27 21 912 3000

Faks: +27 21 912 3222

Epos: kim.pontac@advisian.com

Om ingesluit te word in die finale Tegniese Verslag, moet kommentaar Advisian bereik vóór of op 2 Augustus 2016. Slegs geregistreerde B&GPs sal in kennis gestel word van toekomstige geleenthede om kommentaar te lewer.



*An English version of this document is available – please contact Advisian.
Le isiXhosa uguqulelo olu xwebhu luyafumaneka - nceda uqhagamshelane Advisian.*



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Appendix C Proof of Placement





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Please do not hesitate to contact the aforementioned EAP should you have any further enquiries.

Yours sincerely,

Practice Manager

Environment & Society (Africa Projects)

Acknowledgement of Receipt:	
Date:	01/06/2016.
Organisation:	Estem Koebe NC
Persons Name:	Maha Jeng
Signature:	



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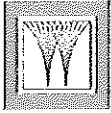
Please do not hesitate to contact the aforementioned EAP should you have any further enquiries.

Yours sincerely,

Practice Manager

Environment & Society (Africa Projects)

Acknowledgement of Receipt:	
Date:	31. 5 - 2016
Organisation:	Koebay Library
Persons Name:	Roelda Brown
Signature:	RBrown



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Please do not hesitate to contact the aforementioned EAP should you have any further enquiries.

Yours sincerely,

A handwritten signature in cursive script, appearing to read 'M. Mabuto'.

Practice Manager

Environment & Society (Africa Projects)

Acknowledgement of Receipt:	
Date:	2016/06/01
Organisation:	SA-SSA
Persons Name:	SINIAZ
Signature:	



Advisian

WorleyParsons Group

Please do not hesitate to contact the aforementioned EAP should you have any further enquiries.

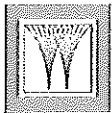
Yours sincerely,

A handwritten signature in cursive script, appearing to read 'Mabel'.

Practice Manager

Environment & Society (Africa Projects)

Acknowledgement of Receipt:	
Date:	31.5.2016
Organisation:	WESSENER LIBRARY
Persons Name:	CAROL STUBBS
Signature:	



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WorleyParsons Group

Please do not hesitate to contact the aforementioned EAP should you have any further enquiries.

Yours sincerely,

Practice Manager

Environment & Society (Africa Projects)

Acknowledgement of Receipt:	
Date:	31 MAY 2016
Organisation:	AVONDALE LIBRARY
Persons Name:	E. BASSON
Signature:	E. Basson

AVONDALE LIBRARY
GROSVENOR AVENUE ATLANTIS
TEL: 021- 572 3529
AVONDALE.LIBRARY@capetown.gov.za

Notice of Application for a Coastal Waters Discharge Permit for Koeberg Nuclear Power Station in terms of Section 69 of the Integrated Coastal Management Act, (Act No. 24 Of 2008)

Application Reference No.: 2012/011/WC/Koeberg Power Station

Notice is given, in terms of Section 69 of the National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008) that the Applicant, namely, Eskom Holdings SOC Limited hereby applies for a Coastal Waters Discharge Permit (CWDP) from the Department of Environmental Affairs (Oceans and Coasts) for the discharge emanating from Koeberg Nuclear Power Station (KNPS) situated on Farm Duynfontyn 1552.

KNPS is located approximately 30 km north of Cape Town, near Melkbosstrand on the West Coast of South Africa. This application for a CWDP is for the discharge of industrial and domestic effluent generated at the power station, via the existing Koeberg Cooling Water Outfall Basin (KCWOB) located at the south west portion of the site boundary.



Figure 1: Layout of effluent streams released into the KCWOB (source: PRDW, 2016)

Draft Coastal Waters Discharge Permit Application Available For Review

The Draft CWDP Application and supporting documentation will be available for review from **2 June until 2 August 2016** at the following locations:

- Hard copies of this application are available at the **Koeberg Public Library** (address: Merchant Walk, Duynfontein, Melkbosstrand. Tel no.: 021 553 2514); **Wesfleur Public library** (address: Wesfleur Circle, Dassenberg, Atlantis. Tel no.: 021 572 7618); **Thusong Service Centre** (address: 1 Nottingham Street, Sherwood Park, Atlantis. Tel no.: 021 572 0289); **Avondale Public Library** (address: Civic Centre, Grosvenor Avenue, Atlantis. Tel no.: 021 572 3529) and the **KNPS Visitors Centre** (address: Koeberg Nuclear Power Station, R27 off West Coast Road, Tel no.: 021 550 4667).
- Electronic copies will be made available on the Advisian website and on request from the Environmental Assessment Practitioner listed below. Website: <https://public-wst.worleyparsons.com/sites/AfricaEnviron/SitePages/Home.aspx>.

Public Meeting

All Interested and Affected Parties are invited to attend the quarterly Koeberg Public Safety Information Forum (KPSIF) to be held on the 30 June 2016, 19h00 at the **KNPS Visitors Centre**, Koeberg Nuclear Power Station. The CWDP application will be presented at this KPSIF.

Queries and Formal Comments

Interested and Affected Parties with any queries and comments on the CWDP application are hereby requested to forward their comments to the contact person listed below **before Tuesday 2 August 2016**.

Advisian: Environmental Assessment Practitioner (EAP)

Advisian EAP: Kim Pontac

E-Mail Address: kim.pontac@advisian.com

Postal Address: P.O. Box 398, Bellville, 7535

Telephone No.: 021 912 3000

Facsimile No.: 021 912 3222



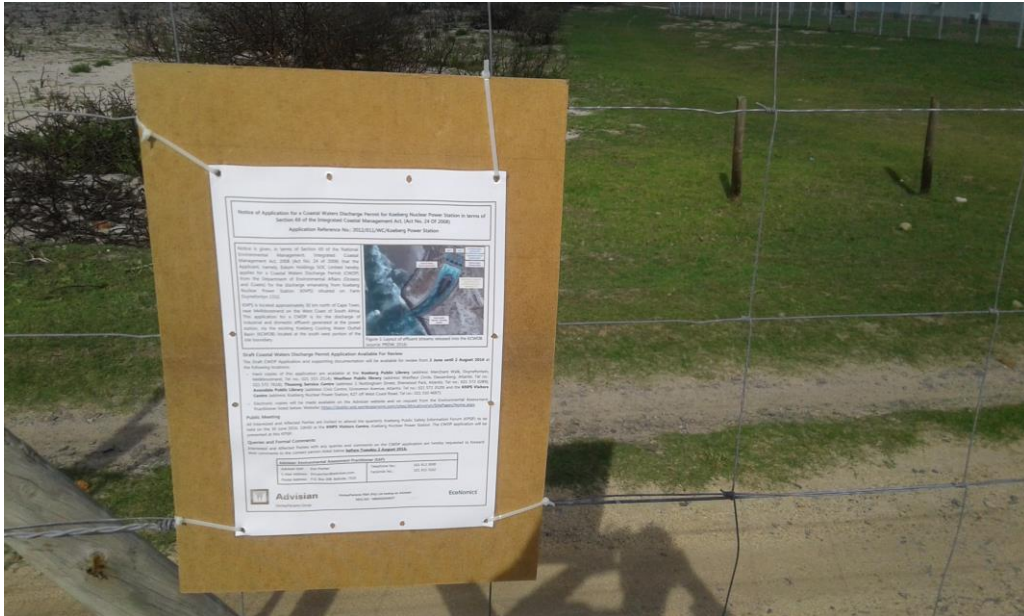
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Appendix D IAP Database



**COASTAL WATERS DISCHARGE PERMIT APPLICATION FOR KOEBERG NUCLEAR POWER STATION
REGISTERED INTERESTED AND AFFECTED PARTIES DATABASE**

Surname	NAME	COMPANY / AFFILIATION	PHYSICAL/ POSTAL ADDRESS	CONTACT NO.	FAX	EMAIL	REFERENCE NR	CORRESPONDENCE
Authorities								
Tshikotshi	Mulalo	Department of Environmental Affairs; Oceans and Coasts, Coastal Pollution Management	East Pier Building, East Pier Road, Victoria and Alfred Waterfront, Cape Town, 8000	021 819 2455 / 082 830 7323	021 819 2445	MTshikot@environment.gov.za	2012/011/WC/KOEBERG POWER STATION	Notice sent via e-mail, and hardcopies delivered
La Meyer	Adri	Department of Environmental Affairs and Development Planning; Development Facilitation	Utilitas Building, 1 Dorp Street, Cape Town, 8000	021 483 2887		Adri.LaMeyer@westerncape.gov.za	16/3/3/6/4/2/1/A1/14/3151/16 19/2/5/3/A1/14/WL0051/16	Notice sent via e-mail, and hardcopies delivered
Theron	Morné	City of Cape Town Environmental and Heritage Management Branch, Environmental Resource Management Department	Milnerton Civic Building, 87 Pienaar Street, Milnerton, 7435	021 444 0601	021 444 0605	morne.theron@capetown.gov.za		Notice sent via e-mail, and hardcopies delivered
Smart	Rhett	CapeNature		021 866 8000	021 866 1523 / 086 529 4992	rsmart@capenature.co.za	SSD14/2/6/1/4/1/34_coastal discharge_Koeborg	Notice sent via e-mail, and hardcopies delivered
Joubert	Adriaan	National Nuclear Regulator				Ajoubert@nnr.co.za		Notice sent via e-mail, and hardcopies delivered
CIVIC ORGANISATIONS								
La Grange	Smokie	Melkbosstrand Rate Payers Association		073 357 6359		duvall@mweb.co.za		Media Notice
PUBLIC SAFETY INFORMATION FORUM MEMBERS								
Martinus Fredericks		Chair Atlantis Ward 29		078 586 1325		martinusf2@gmail.com		Notice sent via e-mail
James Donderman		Vice Chair Atlantis Ward 30		078 881 2179		james.donkerman@eskom.co.za		Notice sent via e-mail
Enid Muzeli		Secretary Atlantis Ward 31		083 8997 442		enidmuzeli70@gmail.com		Notice sent via e-mail
Geraldine Kubisa		Vice Secretary Atlantis Ward 32		073 4701 586		kubisageraldine@gmail.com		Notice sent via e-mail
Joy Davids		Treasurer Atlantis Ward 33		071 361 2264		joyd31@gmail.com		Notice sent via e-mail
Steve Abrahamse		CoCT		084 248 1130		Steve.abrahamse@capetown.gov.za		Notice sent via e-mail
Waleed Adams		CoCT		021 400 5407		Waleed.Adams@capetown.gov.za		Notice sent via e-mail
Riedewaan Bakardien		Eskom Holdings				BakardR@eskom.co.za		Notice sent via e-mail
Lindelwa Bobo		CoCT		021 550 7622		Lindelwa.bobo@capetown.gov.za		Notice sent via e-mail
Lunga Bobo		CoCT		021 630 1619		Lunga.bobo@capetown.gov.za		Notice sent via e-mail
Kevin Engel		Eskom Holdings		021 550 4707		EngelK@eskom.co.za		Notice sent via e-mail
Kieth Featherstone		Eskom Holdings				FeatherK@eskom.co.za		Notice sent via e-mail
Ian Gildenhuys		CoCT City Health		021 590 5200		Ian.Gildenhuys@capetown.gov.za		Notice sent via e-mail
Dr Tim Hill		National Nuclear Regulator		021 553 9500	021 553 1361	thill@nnr.co.za		Notice sent via e-mail
Franco Johannes		CoCT Disaster Risk Management Centre		073 111 0301		Franco.johannes@capetown.gov.za		Notice sent via e-mail
Debbie Joshua		Eskom Holdings		021 550 4238		Debbie.joshua@eskom.co.za		Notice sent via e-mail
Tertius Karsten		Eskom Holdings		021 550 4624		KarstenT@eskom.co.za		Notice sent via e-mail
Ditebogo Kgomo		Department of Energy		012 679 9501		Ditebogo.kgomo@energy.gov.za		Notice sent via e-mail
Kim Kline		Eskom Holdings				KlineKN@eskom.co.za		Notice sent via e-mail
Bettie Leedo		CoCT City Health		021 514 4125		Bettie.leedo@capetown.gov.za		Notice sent via e-mail
Jurina Le Roux		Eskom Holdings		082 663 3467		lerouxju@eskom.co.za		Notice sent via e-mail
Ricky Lewders		CoCT Disaster Risk Management Centre		021 983 2662		Ricky.lewders@capetown.gov.za		Notice sent via e-mail
Lerato Makgae		Eskom Holdings		011 800 6350 / 074 236 4858		MakgaeL@eskom.co.za		Notice sent via e-mail
Reuben Makgae		National Nuclear Regulator		012 674 7100		rmakgae@nnr.co.za		Notice sent via e-mail
Bessie Makgopa		Department of Energy		012 406 7490 / 074 940 1404		Bessie.makgopa@energy.gov.za		Notice sent via e-mail
Simphiwe Makhathini		Department of Public Enterprises (DPE)				Simphiwe.makhathini@dpe.gov.za		Notice sent via e-mail
Vanessa Majola		NNR Koeberg Site Office		021 553 9523		vkmajola@nnr.co.za		Notice sent via e-mail
Katse Maphoto		Department of Energy				Katse.Maphoto@energy.gov.za		Notice sent via e-mail
Bongani Mnisi		CoCT		021 514 4164 / 083 591 7791		Bongani.mnisi@capetown.gov.za		Notice sent via e-mail

Bhepiso Mogorosi	National Nuclear Regulator		071 330 3491		tmogorosi@nnr.co.za		Notice sent via e-mail
Gino Moonsamy	National Nuclear Regulator		012 674 7111 / 7109		gmoonsamy@nnr.co.za		Notice sent via e-mail
Princess Mthombeni	Necsa		012 305 5676 / 082 384 2144		princess.mthombeni@necsa.co.za		Notice sent via e-mail
Gift Nhlapho	National Nuclear Regulator				gnhlapho@nnr.co.za		Notice sent via e-mail
Phenyo Nonqane	Necsa Corporate Communication		012 305 4431 / 083 701 9897		phenyo.nonqane@necsa.co.za		Notice sent via e-mail
Lewis Phidza	Eskom Holdings		021 550 5758 / 072 082 6867		Lewis.phidza@eskom.co.za		Notice sent via e-mail
Shaun Pienaar	Eskom Holdings		021 550 5263		pienaasz@eskom.co.za		Notice sent via e-mail
Greg Pillay	CoCt		021 597 5009	021 597 5010	Greg.pillay@capetown.gov.za		Notice sent via e-mail
Charlotte Powell	CoCT Disaster Risk Management Centre		021 597 5013 / 084 711 7710		Charlotte.powell@capetown.gov.za		Notice sent via e-mail
Phindile Radebe	Eskom Holdings		021 550 4635		RadebePS@eskom.co.za		Notice sent via e-mail
Mothusi Ramerafe	National Nuclear Regulator		012 674 7144 / 7100		rmerafe@nnr.co.za		Notice sent via e-mail
Amelia Rennie-Kroon	Necsa		012 305 5562 / 083 631 0635		amelia.rennie-kroon@necsa.co.za		Notice sent via e-mail
Martin Saaymans	Eskom Holdings		021 550 6116 / 072 148 9958		Martin.saaymans@eskom.co.za		Notice sent via e-mail
Arno Schronen	CoCT Traffic Services		021 550 1380		Arno.schronen@capetown.gov.za		Notice sent via e-mail
Victoria Seitsei	National Nuclear Regulator		012 674 7109		vseitei@nnr.co.za		Notice sent via e-mail
John Spotten	CoCT		021 400 9132 / 084 231 4457		John.spotten@capetown.gov.za		Notice sent via e-mail
Kelvin Staffen	Eskom Holdings		021 550 5580		StaffenK@eskom.co.za		Notice sent via e-mail
Dr Elmien Steyn	CoCT		021 597 5019	086 588 6870	Elmien.Steyn@capetown.gov.za		Notice sent via e-mail
Nikelwa Tengimfene	Necsa		012 305 5458 / 082 574 5495		nikelwa.tengimfene@necsa.co.za		Notice sent via e-mail
Ian Trollope	Eskom Holdings				Trollopi@eskom.co.za		Notice sent via e-mail
Thabo Tselane	National Nuclear Regulator		012 674 7100	012 674 7103	ttselane@nnr.co.za		Notice sent via e-mail
Andretta Tsebe	Department of Public Enterprises (DPE)		012 431 1102		Andretta.tsebe@dpe.gov.za		Notice sent via e-mail
Tshekane Tshepe	Department of Energy		082 679 3278		Tshekane.tshepe@energy.gov.za		Notice sent via e-mail
Dr Bismark Tyobeka	National Nuclear Regulator (CEO-2013)						Notice sent via e-mail
Francis Van Der Byl	CoCT Fire		084 248 1132		Francis.vanderbyl@capetown.gov.za		Notice sent via e-mail
Neville Van Rensburg	WC Government - EMS Services				Neville.vanrensburg@westerncape.gov.za		Notice sent via e-mail
Stephen Van Rensburg	CoCT Disaster Risk Management Centre		021 980 1352 / 084 909 4137		Stephen.van_Rensburg@capetown.gov.za		Notice sent via e-mail
Charles Van Vuuren	Law Enforcement		021 554 8000		charles.vanvuuren@capetown.gov.za		Notice sent via e-mail
Simphiwe Xaso	Eskom Holdings		021 550 4780		XasoSS@eskom.co.za		Notice sent via e-mail
MEMBERS OF THE PUBLIC							
Rhine Barnes	NSRI Melkbosstrand	15 Linde Crescent, Duynefontein, 7441	021 550 4610 / 082 990 5958	086 667 4159	statcom@telkomsa.net BarnesR@eskom.co.za		Media Notice
Penny Jenkins	Private		082 9980752		penny@completecoast.com info@pierrejenkins.com		Media Notice
S Little	Private				Online2606841@telkomsa.net		Media Notice
Lawrence Molele	Private		011 800 3423 / 079 377 9498		MoleleLK@eskom.co.za		Media Notice
Robert Els	Private		021 481 8722 / 074 809 1000	021 481 8799	Robert.Els@WSPGroup.co.za		Media Notice



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Appendix E Proof of Notification



From: Pontac, Kim (Advisian)
Cc: [Pontac, Kim \(Advisian\)](#)
Bcc: "morne.theron@capetown.gov.za"; "rsmart@capenature.co.za"; "Adri.LaMeyer@westerncape.gov.za"; "MTshikot@environment.gov.za"
Subject: Invitation to Comment - Coastal Waters Discharge Permit Application for Koeberg Nuclear Power Station (DEA Ref. No.: 2012/011/WC/KOEBERG POWER STATION)
Date: Wednesday, June 01, 2016 12:16:00 PM
Attachments: [image001.png](#)
[C00278 KNPS CWDP All State Department Letters Final .pdf](#)
[Koeberg CWDP Executive Summary Final.pdf](#)
Importance: High

Dear Stakeholder,

Hereby you are notified of the **Coastal Waters Discharge Permit (CWDP) Application for Koeberg Nuclear Power Station.**

Find attached the Stakeholder letter, as well as the Executive Summary Document.
Please note the Interested and Affect Party (I&AP) Registration and comment period is from **02 June – 02 August 2016.**

Please provide your comments to the Environmental Assessment Practitioner (EAP) listed below **by Tuesday 02 August 2016.**

Should you require anything further information please contact the undersigned.

Kind Regards,

Kim Pontac
Senior Environmental Scientist

31 Allen Drive | Cape Town, Loevenstein 7530
P +27219123000 | **M** +27824100998
E kim.pontac@advisian.com

www.advisian.com



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You replied to this message on 2016/06/02 03:46 PM.

From: Bernice Rodrigues Sent: Wed 2016/06/01 12:27 PM
To: Bernice Rodrigues
Cc: Jonas, Ryan (Cape Town) (Ryan.Jonas@Advisian.com) (Ryan.Jonas@Advisian.com)
Bcc: 'Steve.abrahamse@capetown.gov.za'; 'Waleed.Adams@capetown.gov.za'; 'Lindelwa.bobo@capetown.gov.za'; 'Lunga.bobo@capetown.gov.za'; 'Tan.Gildenhuys@capetown.gov.za'; 'thill@nnr.co.za'; 'Franco.johannes@capetown.gov.za'; 'Ditebogo.kgomo@energy.gov.za'; 'Bettie.leedo@capetown.gov.za'; 'Ricky.lewiders@capetown.gov.za'; 'rmakgae@nnr.co.za'; 'Bessie.makgopa@energy.gov.za'; 'Simphiwe.makhathini@dpe.gov.za'; 'vkajola@nnr.co.za'; 'Katse.Maphoto@energy.gov.za'; 'Bongani.mnisi@capetown.gov.za'; 'tmogorosi@nnr.co.za'; 'gmoonsamy@nnr.co.za'; 'princess.mthombeni@necsa.co.za'; 'gnhlapho@nnr.co.za'; 'phenyo.nonqane@necsa.co.za'; 'Greg.pillay@capetown.gov.za';
Subject: Notice of Application for a Coastal Waters Discharge Permit for Koeberg Nuclear Power Station in terms of Section 69 of the Integrated Coastal Management Act, (Act No. 24 of 2008)

Message Notice of Application for a Coastal Waters Discharge Permit for Koeberg Nuclear Power Station.pdf (134 KB)

Good Day,

Please find attached the **Notice of Application for a Coastal Waters Discharge Permit for Koeberg Nuclear Power Station in terms of Section 69 of the Integrated Coastal Management Act (Act No. 24 of 2008)** for your information.

Kind regards,
Bernice Rodrigues
Stakeholder Management
Koeberg Operating Unit
Tel no: +27 21 550 5227
Fax no: +27 86 556 4724
E-mail: rodrigb@eskom.co.za

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You forwarded this message on 2016/06/01 03:38 PM.

From: Bernice Rodrigues Sent: Wed 2016/06/01 01:12 PM
To: Bernice Rodrigues
Cc: Jonas, Ryan (Cape Town) (Ryan.Jonas@Advisian.com) (Ryan.Jonas@Advisian.com)
Bcc: 'john@melkbosstrand.net'; 'Babara.Rass@capetown.gov.za'; 'barbararass@yahoo.co.uk'; 'duvall@mweb.co.za'; 'Cynthia.Clayton@capetown.gov.za'; 'Ray@wilra.co.za'; 'flabuschagne@sars.gov.za'; 'NHWpr@melkbosstrand.net'; 'nora@capetown.gov.za'; 'NHWpr@melkbosstrand.net'; 'chairman@tableviewratepayers.org.za'; 'vicechair@tableviewratepayers.org.za'; 'pam@tableviewratepayers.org.za'; 'stephen@tableviewratepayers.org.za'; 'Joy.Mccarthy@capetown.gov.za'; 'Babara.Rass@capetown.gov.za';
Subject: Notice of Application for a Coastal Waters Discharge Permit for Koeberg Nuclear Power Station in terms of Section 69 of the Integrated Coastal Management Act, (Act No. 24 of 2008)

Message Notice of Application for a Coastal Waters Discharge Permit for Koeberg Nuclear Power Station.pdf (134 KB)

Good Day,

Please find attached the **Notice of Application for a Coastal Waters Discharge Permit for Koeberg Nuclear Power Station in terms of Section 69 of the Integrated Coastal Management Act (Act No. 24 of 2008)** for your information.

Kind regards,
Bernice Rodrigues
Stakeholder Management
Koeberg Operating Unit
Tel no: +27 21 550 5227
Fax no: +27 86 556 4724
E-mail: rodrigb@eskom.co.za

Click on a photo to see social network updates and email messages from this person.

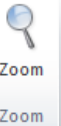
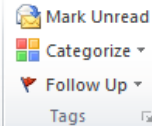
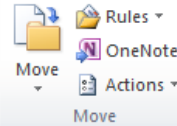
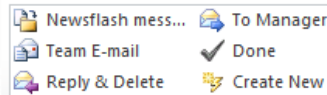
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You forwarded this message on 2016/06/01 03:45 PM.

Sent: Wed 2016/06/01 03:38 PM

From: Bernice Rodrigues

To: Bernice Rodrigues

Cc: Jonas, Ryan (Cape Town) (Ryan.Jonas@Advisian.com) (Ryan.Jonas@Advisian.com)

Bcc: 'Martinusf2@gmail.com'; 'Mvrooyenl@gmail.com'; 'Enidmuzeli70@gmail.com'; 'Danielkastoor@gmail.com'; 'kubisageraldine@gmail.com'; 'Lightburnag@yahoo.com'; 'Nicholaskok@gmail.com'; 'Linley.light@gmail.com'; 'charlesTI@daff.gov.za'; 'davidscarol418@gmail.com'; 'celestea76@gmail.com'

Subject: Notice of Application for a Coastal Waters Discharge Permit for Koeberg Nuclear Power Station in terms of Section 69 of the Integrated Coastal Management Act, (Act No. 24 of 2008)

Message Notice of Application for a Coastal Waters Discharge Permit for Koeberg Nuclear Power Station.pdf (134 KB)

Good Day,

Please find attached the **Notice of Application for a Coastal Waters Discharge Permit for Koeberg Nuclear Power Station in terms of Section 69 of the Integrated Coastal Management Act (Act No. 24 of 2008)** for your information.

Kind regards,
Bernice Rodrigues
Stakeholder Management
Koeberg Operating Unit
Tel no: +27 21 550 5227
Fax no: +27 86 556 4724
E-mail: rodrigb@eskom.co.za



I am a Nuclear Professional!



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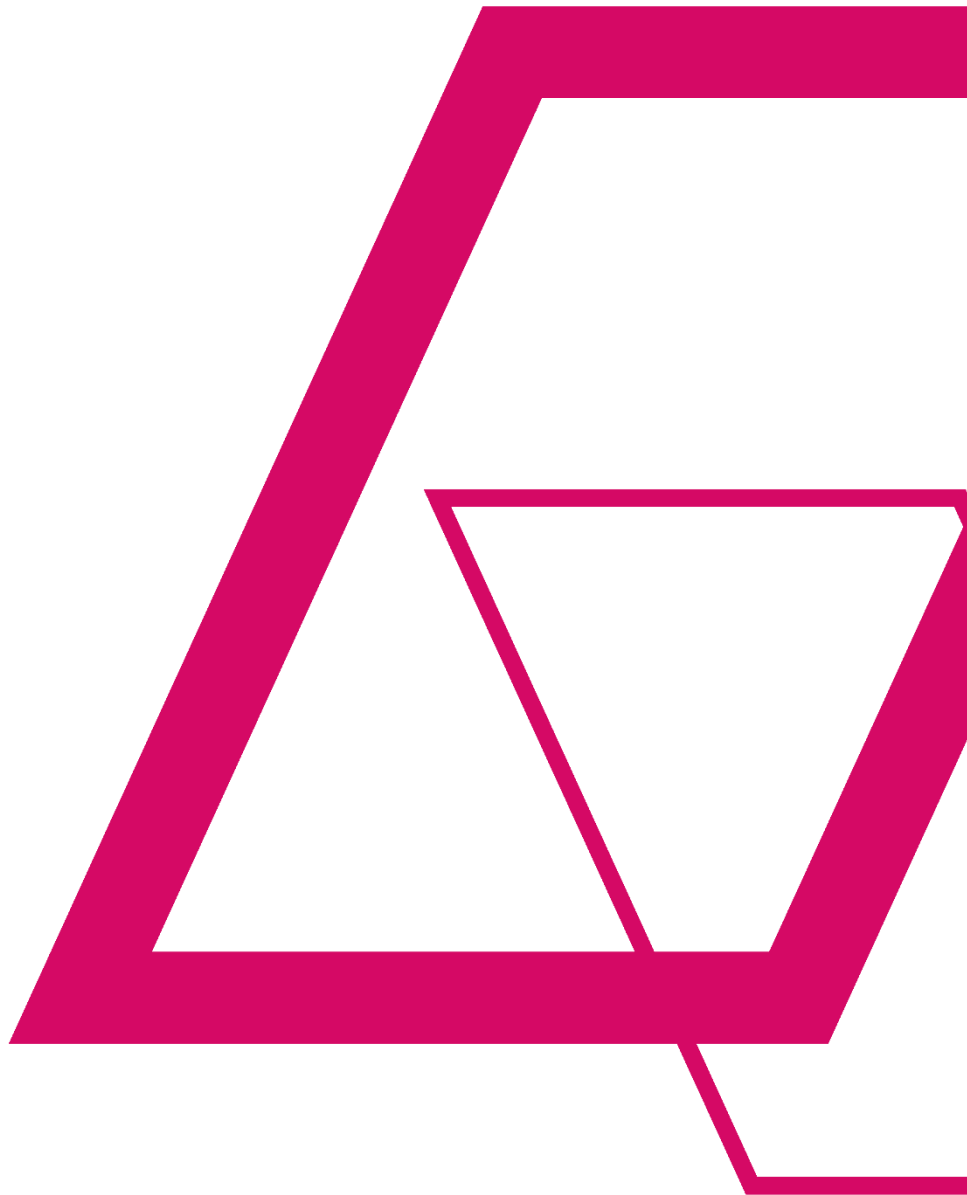


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Appendix F Comments and Responses

Table





Comments and Responses Table

Issue or Comment		Response
Organisation: NSRI Melkbosstrand		Date received: 01/06/2016
Representative: Mr Rhine Barnes		
NSRI Melkbosstrand is concerned about the safety of people and marine life in the sea around Melkbosstrand		<p>The project and application process has been conducted in accordance with various National Guideline Documents; of particular relevance is the National Guideline for the Discharge of Effluent from Land-based Sources into the Coastal Environment (DEA, RP101/2014). This document includes a hierarchy of decision-making which contains elements of the Receiving Water Quality Objectives approach, as well as the precautionary principle of environmental protection through source reduction, minimisation, treatment, re-use, etc. This hierarchy supports the approach and application to dispose of effluent to the coastal environment in that it must demonstrate that all reasonable efforts have been made, firstly to prevent the waste, and secondly to minimise it. Only thereafter will minimum effluent standards or standards based on the receiving environment approach, whichever is strictest, be considered.</p> <p>Various specialist studies have been conducted in support of this application, namely the Effluent Dispersion Modelling Study and Marine Ecology Assessment Study. Due to the complexity of the discharge characterisation, the team developed a pragmatic approach for the application impact assessment. In addition they have developed a methodology to determine the concentration of constituents within the effluent discharge which either, poses a risk or do not pose a significant threat to the receiving environment. The results of the assessment conducted can be found within the applicable study reports and summarised within the Technical Assessment Report. Furthermore, as per the requirements of the Generic Assessment Criteria for Coastal Waters Discharge Permits document, the Marine Ecology Assessment Study must define the Receiving Water Quality Objective for KNPS discharge location on the basis of beneficial uses following the Department of Water Affairs (1995) requirements and ecosystem services according to the IFC PS 6 criteria. This can be found in the aforementioned study report. The specialist studies concluded that the specified limits for Temperature, Total Residual Oxidant (TRO), Phosphate and Hydrazine within the KNPS discharge plume is not compliant with established water quality guidelines, however the risks to organisms with ~2 km of the discharge is limited. All predicated ecological impacts associated with the discharge were graded as being low to medium significance, and all water quality guideline concentrations were rated as high or medium significance due to the large mixing zones¹. It should be noted that mitigation options have</p>

¹ Mixing zone is defined as a limited area or volume of the receiving water where the initial dilution of a discharge is allowed to occur, until the water quality standards are met. It is dependent on effluent source, ambient environment and regulatory constraints.



Issue or Comment	Response
	<p>been identified to reduce the associated impacts, however these will require feasibility assessments, including simulation modelling, and cost/benefit analysis before implementation.</p> <p>Further to the above, existing marine environmental monitoring conducted at KNPS over the last 34 years to assess the impacts associated with the discharge have proven that there is little to no adverse impact on the receiving environment, refer to Section 7.4 of the Technical Assessment Report for further details. In addition, future monitoring proposed includes effluent toxicity testing, sediment contamination sampling, effluent plume distribution and toxicity effects, etc., refer to Section 7.5 for further details pertaining to the above.</p>
Who will oversee the discharge?	Since the promulgation of the National Environmental Management: Integrated Coastal Management Act, 24 of 2008 (NEM: ICMA) the national Department of Environmental Affairs: Oceans and Coasts is the competent authority in respects of the CWDP, this includes the compliance and enforcement of the said permit.
Organisation: Private Lawrence Molele	Date received: 03/06/2016
Can you please send me the PDF of the attached document	The application form and all supporting documents were sent to the IAP.
Organisation: Private S Little	Date received: 08/07/2016
I saw the article on the above and as a concerned resident would like more information please.	The application form and all supporting documents were sent to the IAP.
Organisation: Private Robert Els	Date received: 08/07/2016
I live in Sunningdale and read the attached article in the local paper and am interested in the project. Please can you send me further details regarding the documents available for review.	The application form and all supporting documents were sent to the IAP.
Organisation: Private Penny Jenkins	Date received: 06/07/2016
I read the article in the	The application form and all supporting documents were sent to the



Issue or Comment	Response
<p>Tygerburger, 6 July 2016, "Have Your Say On Koeberg Discharge".</p> <p>Can you give me any additional information?</p> <p>Can you also share the diagram you mention in your article which you used to illustrate the workings of the power station?</p> <p>Is this discharge in anyway harmful to the environment and residents living close by or walking or swimming on the beach?</p>	<p>IAP. The figure the IAP is referring to is referenced in the Technical Assessment Report, Figure 3 Conceptual Diagram of KNPS.</p> <p>Various specialist studies have been conducted in support of this application, namely the Effluent Dispersion Modelling Study and Marine Ecology Assessment Study. Due to the complexity of the discharge characterisation, the team developed a pragmatic approach for the application impact assessment. In addition they have developed a methodology to determine the concentration of constituents within the effluent discharge which either, poses a risk or do not pose a significant threat to the receiving environment. The results of the assessment conducted can be found within the applicable study reports and summarised within the Technical Assessment Report. The specialist studies concluded that the specified limits for Temperature, Total Residual Oxidant (TRO), Phosphate and Hydrazine within the KNPS discharge plume is not compliant with established water quality guidelines at the end of the outfall. Thus dispersion studies were performed to determine the extent of the mixing zones. The risks to organisms within the mixing zone, ~2 km of the discharge is limited. All predicated ecological impacts associated with the discharge were graded as being low to medium significance, and all water quality guideline concentrations were rated as high or medium significance due to the large mixing zones². It should be noted that mitigation options have been identified to reduce the associated impacts, however these will require feasibility assessments, including simulation modelling, and cost/benefit analysis before implementation. In addition, the effluent discharge has no risk or significance to human health or wellbeing.</p> <p>Further to the above, existing marine environmental monitoring conducted at KNPS over the last 34 years to assess the impacts associated with the discharge have proven that there is little to no adverse impact on the receiving environment, refer to Section 7.4 of the Technical Assessment Report for further details. In addition, future monitoring proposed, includes effluent toxicity testing, sediment contamination sampling, effluent plume distribution and toxicity effects, etc., refer to Section 7.5 for further details pertaining to the above.</p>
<p>Organisation: DEADP</p> <p>Representative: Refer to the letter</p>	<p>Date received: 03/08/2016</p>
<p>Compliance:</p> <p>It is noted that the temperature of effluent that is discharged into the marine environment does not meet the standards as set in the SA Water Quality Guidelines for</p>	<p>During the CWDP assessment for KNPS it became evident that generic Receiving Waters Quality Objective (RWQO) criteria should not be used for a power station given the nature of the discharge. The KNPS assessment studies have shown that the generic (e.g. SARWQO) criteria cannot be met in all cases and site-specific criteria were developed to inform the impact assessment. The assessment did consider the SA Water Quality Guidelines of 1995 as required in the national guideline</p>

² Refer to note 1, above.



Issue or Comment	Response
Coastal Marine Waters, 1995.	(Ground Rule 11).
As per the above, the temperature of the discharge water is non-compliant with existing and developing Policy on marine outfalls in SA. It is recommended that the applicant explore and employ best available technologies and/or methods for cooling discharge water to meet the relevant prescribed standards.	Specialist studies show that temperature, chlorine, phosphate and hydrazine discharges do not meet the RWQO at the discharge point. As such, dispersion modelling was performed to determine the extent of the mixing zone. The mixing zone was developed for a worse case discharge and 95% dispersion conditions. This is very conservative for discharges that only occur for a very short duration (e.g. hydrazine and chlorine) making the assessment very difficult. Discharge concentrations can vary quite significantly, and for example, the highest discharge of chlorine in 2015 was 2,3 mg/l (for 10 minutes) whereas the discharge modelled was 6 mg/l to envelop all credible scenarios.
In addition, phosphate, hydrazine and chlorine also do not meet the standards as set in the above-mentioned guideline.	The Marine Ecology Impact Assessment shows that there is no adverse impact due to the phosphate release, and the temperature discharge meets the site specific criteria at the end of a very small mixing zone. It is only chlorine and hydrazine that have relatively large mixing zones. To better understand the impact of the large mixing zones, the impact on sensitive ecosystems in the mixing zones was assessed.
Alternative mitigation measures must be further investigated and implemented to ensure that standards as prescribed in the relevant guidelines are met.	The existing marine environmental monitoring conducted at KNPS over the last 34 years to assess the impacts associated with the discharge have proven that there is little to no adverse impact on the receiving environment, refer to Section 7.4 of the Technical Assessment Report for further details. In addition, future monitoring proposed, includes effluent toxicity testing, sediment contamination sampling, effluent plume distribution (inclusive of temperature, as a proxy for other constituents) and toxicity effects, etc., refer to Section 7.5 for further details. One of the reasons for this is that chlorine; hydrazine and thermal discharges do not bio-accumulate and are not persistent in the environment.
The applicant has indicated that the chlorine and hydrazine release practices into the marine environment will be reviewed to determine whether it would be feasible to change the release practices in order to meet the standards as set in the relevant guidelines. This decision is strongly supported by this Directorate.	KNPS's discharge is aligned to international norms. Chlorine remains the most widely used power plant cooling water biocide. Also, hydrazine is the most widely used oxygen scavenger in nuclear power plants worldwide. However, the ecological specialist has recommended that the chlorine and hydrazine practices at KNPS are reviewed.
The discharge concentration of chlorine (TRO) is non-compliant with the current Permit conditions and existing policy on marine outfalls in SA. As per the above, this Directorate supports the recommendation that the applicant investigates the effects of alternating chlorine	The assessment of the above, during the CWDP application process, will consider the submission taking into account all relevant factors as required by section 69(7) of the Act which includes the environmental benefit of effluent reduction vs socio economic impacts of the source reduction and industry best practise.



Issue or Comment	Response
<p>dosing intensity and frequency.</p> <p>The discharge concentration of hydrazine is non-compliant with current policy on marine outfalls in SA. As per the above, this Directorate supports the recommendation that the applicant investigates alternative hydrazine discharge practices in order to reduce the frequency of current non-compliance.</p>	
<p>Monitoring:</p> <p>It is noted that the applicant currently implements a monitoring programme to assess the impacts of cooling water and effluent discharge on the marine environment. The overall conclusion of the current monitoring indicates that KNPS has had very little detrimental impacts on the ecology of the local sandy beaches.</p> <p>It is further noted that additional monitoring is proposed to address the actual as opposed to the predicted toxicity effects on the receiving environment. Monitoring will also include sediment contamination and monitoring effects on intertidal organisms.</p> <p>The proposed additional monitoring is supported by this Directorate as this will result in specific mitigation measures to be implemented to minimise the potential impacts on the receiving environment as a result of effluent discharge. It is proposed that all mitigation measures should be</p>	<p>Section 7 of the Technical Assessment Report describes the monitoring programme currently implemented at KNPS. In addition, based on the findings of the assessment studies, additional monitoring has been recommended and is currently being investigated in terms of benefits for the receiving environment and to evaluate these against the costs of implementation.</p> <p>Eskom has an integrated Environmental Management Programme (EMPr) in place. The documents that make up the EMPr are considered living documents and therefor will be amended to incorporate any additional environmental monitoring required by the CWDP conditions. Once the details of the CWDP permit conditions are known, we will engage with the DEA to determine which components of the EMPr will require DEA approval or concurrence. Eskom will ensure that the appropriate processes are developed to ensure that the monitoring is performed.</p>



Issue or Comment	Response
<p>consolidated into an Environmental Management Programme.</p>	
<p>Heavy Metal Settlement Monitoring:</p> <p>It is further noted that there is toxic heavy metal settlement and accumulation within the intake basin. Dredging within the intake basin will release the absorbed heavy metals downstream of the discharge location. It is recommended that continued monitoring of sediment for heavy metal content, downstream of the outfall point be implemented.</p>	<p>KNPS effluent discharge contains very low concentrations of heavy metals, and is compliant with the concentrations in respect of the DWAF receiving water quality thresholds. Though deposition of heavy metals in quiet water areas may cause build up through continued supply, this may also generate concentration levels approaching or exceeding those thresholds. Candidate depositional areas that may be influenced by KNPS discharge have been identified by PRDW and have been measured in 2015. The result of this survey is presented in Appendix A, of the Lwandle (2016) report. Heavy metal concentrations were low (at or near the analytical detection limit) which confirms that Koeberg Cooling Water Intake Basin is the only depositional site. The heavy metal concentrations were elevated but variable in the Koeberg Cooling Water Intake Basin (KCWIB). But, the KCWIB sediments do not classify as being contaminated to the extent that they constitute toxicity risks. The dredging of the KCWIB and discharge beyond the KCWOB, does not pose any significant risk to the receiving environment, as the discharge area is classified as a high wave energy beach therefore deposition of heavy metals is not possible to such an extent. Thus no further mitigation actions have been recommended by the team.</p>
<p>Organisation: CapeNature</p> <p>Representative: Rhett Smart</p>	<p>Date received: 04/08/2016</p>
<p>Comments only pertain to the biodiversity related impacts and not to the overall desirability of the application.</p>	
<p>In terms of the coastal and marine environment, CapeNature's mandate extends above the high water mark of the sea, and will only comment on applications below the high water mark if it will impact on a marine protected area (MPA) managed by CapeNature or any of our other nature reserves.</p>	<p>Your comment is noted.</p>
<p>There are no marine protected areas (MPAs) managed by CapeNature within the vicinity of the Koeberg Nuclear Power Station. Seal Ledges Island</p>	<p>Your comment is noted. The nearest MPAs to the facility are 16 mile beach to the north, Robben Island to the south-west and the Benguela Mud MPA to the north-west further offshore (Lwandle, 2016). Cognisance of these has been taken into consideration during the Marine Ecology Assessment. Risks to organisms within ~2 km of the discharge are limited and the predicted ecological impacts associated</p>



Issue or Comment	Response
<p>Reserve is a small rock outcrop off the coast of the northern section of the Koeberg Nature Reserve. This island reserve does not contain any important populations of any species and it is not evident that the plumes from the power station discharge (temperature and chemicals) will reach this far.</p>	<p>with the discharge are graded as being of low to medium significance.</p>
<p>In terms of African Penguins (<i>Spheniscus demersus</i>) nesting on Robben Island, they may marginally forage within the range of the power station; however the localized impact from the discharge is unlikely to have a significant impact on this highly mobile species.</p>	<p>Your comment is noted. Cognisance of Robben Island, as the nearest Marine Protected Area (MPA), was taken into consideration during the Marine Ecology Assessment, and we confirm that the discharge has no impact on the MPA, Penguins or seabird colonies situated on the island. Please refer to the appended specialist report for the results of the assessment study.</p>
<p>It should also be noted that the Koeberg Nature Reserve is a protected area under Section 23 of NEM:PAA with a stewardship agreement with CapeNature and it must be ensured that the coastal discharge does not impact on the nature reserve.</p>	<p>Your comment is noted and we confirm that the discharge has no impact on the nature reserve.</p>
<p>In conclusion, the coastal discharge does not have a significant impact on any areas within CapeNature mandate for biodiversity conservation.</p>	<p>Your comment is noted and we concur, the discharge has no significant impact on any area within CapeNatures' mandate.</p>
<p>Organisation: City of Cape Town</p> <p>Representative: Morné Theron</p>	<p>Date received: 05/08/2016</p>
<p>It is noted that no additional infrastructure are being proposed as part of this permit application. This application is necessitated in</p>	<p>We concur there are no additional infrastructure being proposed and therefore no additional SEMA authorisations required. As indicated, this application process is to align the existing coastal waters discharge with the NEM: ICMA</p>



Issue or Comment	Response
<p>order to align the existing coastal water discharge process with the NEC: IMCA.</p>	
<p>The City concurs that the theoretical alternative one, being the discharge of cooling water to a municipal waste water treatment works (WWTW), is not pragmatic due to its negative operational impact on the existing available municipal WWTWs.</p>	<p>Your comment re the project alternatives and motivation for the preferred option is noted.</p>
<p>The City takes note of the conclusions and recommendations reached in Section 6 of the draft Technical Assessment Report, dated May 2016, as compiled by Advisian. In light of the aforementioned the recommended (1) monitoring programme, (2) continued intertidal beach monitoring and (3) investigation of potential benefits from modifying chlorination procedures and hydrazine discharge practices are encouraged.</p>	<p>The processes and technology currently implemented at KNPS are considered the most appropriate pollution control measures and the application of best available technique (BAT) for water discharge activities in the nuclear industry. Nevertheless, Eskom will review its hydrazine and chlorine practices to determine if it is feasible to further minimise the release. Eskom proposes to consult with the DEA regarding the identified mitigation measures to ensure the most appropriate options are employed, if required.</p>



Advisian

WorleyParsons Group

Appendix G Correspondence Received





Advisian

WorleyParsons Group

WorleyParsons RSA (Pty) Ltd trading as Advisian

REG NO: 1989/002048/07

INTERESTED & AFFECTED PARTY REGISTRATION AND COMMENT FORM

APPLICATION FOR A COASTAL WATERS DISCHARGE PERMIT FOR KOEBERG NUCLEAR POWER STATION IN TERMS OF SECTION 69 OF THE INTEGRATED COASTAL MANAGEMENT ACT, (ACT NO. 24 OF 2008)

APPLICATION REFERENCE NO.: 2012/011/WC/KOEBERG POWER STATION

PLEASE COMPLETE THE FORM AND SUBMIT TO KIM PONTAC PER ONE OF THE FOLLOWING METHODS:

E-MAIL: KimPontac@advisian.com

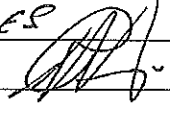
POST:

P.O. Box 398, Bellville, 7535

FAX: 021 912 8222

ADDRESS:

31 Allen Drive, Loevenstein,
Wageningen, 7530

DATE:	2016-06-01	FIRST NAME:	RHINE
TITLE:	MR	SURNAME:	BARNES
ORGANISATION:	NSRI MELKBOOSSTRAND	SIGNATURE:	
POSTAL ADDRESS:	15 LINDE CRESCENT DUYNESFONTEIN	CODE:	7441
TELEPHONE:	021 550-4610	FAX:	086 667 4159
CELLPHONE:	082 990 5958	E-MAIL:	statcom@telkomsa.net Barnes R @ eskom . co . za

PLEASE INDICATE YOUR INTEREST IN THE PROPOSED PROJECT (BUSINESS, FINANCIAL, PERSONAL, ETC.):

NSRI Melkboosstrand is concerned about the safety of people and marine life in the sea around Melkboosstrand

PLEASE NOTE YOUR COMMENTS/ISSUES/CONCERNS REGARDING THE PROPOSED PROJECT:

Who will oversee the discharge.

NB Comments added on 06/06/16 HP.

PLEASE ADD THE FOLLOWING AFFECTED PARTY/PARTIES TO THE MAILING LIST. PLEASE INCLUDE FULL NAME AND SURNAME AND CONTACT DETAILS:

RHINE BARNES 021 550 4610 082 990 5958 STATCOM@TELKOMSA.NET

OFFICIAL USE

DATE RECEIVED:	01 June 2016	OUR REFERENCE:	C00278
STATUS:	Registered.	ACKNOWLEDGEMENT SENT:	01 June 2016.

- End of registration form. Thank you for your contribution -



REFERENCES:

16/3/3/6/4/2/1/A1/14/3151/16 (Development Management)

19/2/5/3/A1/14/WL0051/16 (Waste Management)

DATE: 2016 -08- 02

The Board of Directors
WorleyParsons RSA (Pty) Ltd t/a Advisian
P.O. Box 398

BELLVILLE
7535

For attention: Ms Kim Pontac

Tel: (021) 912 3000
Email: kim.pontac@advisian.com

Dear Madam

COMMENT ON THE APPLICATION FOR A COASTAL WATERS DISCHARGE PERMIT FOR KOEBERG NUCLEAR POWER STATION (DEA REFERENCE NO: 2012/011/WC/KOEBERG POWER STATION)

1. The Notice of Application for a coastal waters discharge permit ("CWDP") for the Koeberg Nuclear Power Station ("NPS") dated 31 May 2016 and received by the Department on 1 June 2016, refers. The following consolidated comment by various directorates in the Department is hereby offered.
2. It is understood that the applicant, Eskom, has an existing statutory approval (Permit and Exemption) in terms of the Water Act, 1956 (Act No. 54 of 1956) for the marine discharge of cooling water and industrial and domestic effluent emanating from the Koeberg NPS via the Koeberg cooling water outlet basin. The National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008) ("NEM: ICMA") has since repealed all legislative provisions with respect to marine discharges. Eskom is therefore required to apply for a CWDP for the Koeberg NPS in terms of Section 69 of the NEM: ICMA.
3. Directorate: Development Management (Region 1) – Melanese Schippers
(Melanese.Schippers@westerncape.gov.za; Tel: (021) 483 8349)
- 3.1 Compliance with water quality guidelines
- 3.1.1 It is noted that the temperature of effluent that is discharged into the marine environment does not meet the standards as set in the South African Water Quality Guidelines for Coastal Marine Waters, 1995. (In this regard, also see comment 4.1 below.)

- 3.1.2 In addition, phosphate, hydrazine and chlorine also do not meet the standards as set in the above-mentioned guideline.
- 3.1.3 Alternative mitigation measures must be further investigated and implemented to ensure that standards as prescribed in the relevant guidelines are met.
- 3.1.4 The applicant has indicated that the chlorine and hydrazine release practices into the marine environment will be reviewed to determine whether it would be feasible to change the release practices in order to meet the standards as set in the relevant guidelines. This decision is strongly supported by this Directorate. (In this regard, also see comments 4.2 and 4.3 below.)

3.2 Monitoring

- 3.2.1 It is noted that the applicant currently implements a monitoring programme to assess the impacts of cooling water and effluent discharge on the marine environment. The overall conclusion of the current monitoring indicates that Koeberg NPS has had very little detrimental impacts on the ecology of the local sandy beaches.
- 3.2.2 It is further noted that additional monitoring is proposed to address the actual as opposed to the predicted toxicity effects on the receiving environment. Monitoring will also include sediment contamination and monitoring effects on intertidal organisms.
- 3.2.3 The proposed additional monitoring is supported by this Directorate as this will result in specific mitigation measures to be implemented to minimise the potential impacts on the receiving environment as a result of effluent discharge. It is proposed that all mitigation measures should be consolidated into an Environmental Management Programme.

4. Directorate: Pollution and Chemicals Management – Anthony van Wyk
(Anthony.vanwyk@westerncape.gov.za; Tel: (021) 483 2980)

- 4.1 As per comment 3.1.1 above, the temperature of the discharge water is non-compliant with existing and developing policy on marine outfalls in South Africa. It is recommended that the applicant explore and employ best available technologies and/or methods for cooling discharge water to meet the relevant prescribed standards.
- 4.2 The discharge concentrations of chlorine (Total Residual Oxidant – TRO) is non-compliant with the current Permit conditions and existing policy on marine outfalls in South Africa. As per comment 3.1.4 above, this Directorate supports the recommendation that the applicant investigates the effects of alternating chlorine dosing intensity and frequency.
- 4.3 The discharge concentration of hydrazine is non-compliant with current policy on marine outfalls in South Africa. As per comment 3.1.4 above, this Directorate supports the recommendation that the applicant investigates alternative hydrazine discharge practices in order to reduce the frequency of current non-compliance.
- 4.4 It is further noted that there is toxic heavy metal settlement and accumulation within the intake basin. Dredging within the intake basin will release the absorbed heavy metals downstream of the discharge location. It is recommended that continued monitoring of sediment for heavy metal content, downstream of the outfall point, be implemented.

5. Directorate: Waste Management – Muneeb Baderoon (Muneeb.Baderoon@westerncape.gov.za; Tel: (021) 483 2965)
- 5.1 This Directorate supports the comments and recommendations made by the Directorates: Development Management and Pollution and Chemicals Management.
6. Please direct all enquiries to the officials indicated in this correspondence should you require any clarity on any of the issues/comments provided.
7. The Department reserves the right to revise initial comments and request further information based on any or new information received.

Yours faithfully



PP **HEAD OF DEPARTMENT**

DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING

SCIENTIFIC SERVICES

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telephone +27 21 866 8017 **fax** +27 21 866 1523
email rsmart@capenature.co.za
reference SSD14/2/6/1/4/1/34_coastal discharge_Koeberg
date 4 August 2016

Advisian
P.O Box 398
Bellville
7535

Attention: Kim Pontac
By email: kim.pontac@advisian.com

Dear Kim

**Application for a Coastal Discharge Permit for Koeberg Nuclear Power Station,
Western Cape**

CapeNature would like to thank you for the opportunity to comment on the application and would like to make the following comments. Please note that our comments only pertain to the biodiversity related impacts and not to the overall desirability of the application.

In terms of the coastal and marine environment, CapeNature's mandate extends above the high water mark of the sea, and will only comment on applications below the high water mark if it will impact on a marine protected area (MPA) managed by CapeNature or any of our other nature reserves.

There are no marine protected areas (MPAs) managed by CapeNature within the vicinity of the Koeberg Nuclear Power Station. Seal Ledges Island Reserve is a small rock outcrop off the coast of the northern section of the Koeberg Nature Reserve. This island reserve does not contain any important populations of any species and it is not evident that the plumes from the power station discharge (temperature and chemicals) will reach this far.

In terms of African Penguins (*Spheniscus demersus*) nesting on Robben Island, they may marginally forage within the range of the power station, however the localized impact from the discharge is unlikely to have a significant impact on this highly mobile species.

It should also be noted that the Koeberg Nature Reserve is a protected area under Section 23 of NEM:PAA with a stewardship agreement with CapeNature and it must be ensured that the coastal discharge does not impact on the nature reserve.

In conclusion, the coastal discharge does not have a significant impact on any areas within CapeNature mandate for biodiversity conservation.

CapeNature reserves the right to revise initial comments and request further information based on any additional information that may be received.

Yours sincerely

A handwritten signature in black ink, appearing to read "Rhett Smart", with a long horizontal flourish underneath.

Rhett Smart
For: Manager (Scientific Services)



CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

ENERGY, ENVIRONMENT AND SPATIAL PLANNING DIRECTORATE
ENVIRONMENTAL RESOURCE MANAGEMENT DEPARTMENT

Morné Theron
Senior Environmental Practitioner

T: (021) 444 0601 F: (021) 444 0605
E: morne.theron@capetown.gov.za
Ref: BA 21/1/2/2/13O

5 August 2016

Advisian
P.O. Box 398
BELLVILLE
7535

Attention: Ms Kim Pontac

[e-mail: kim.pontac@advisian.com]

Tel: 021 912 3000
Fax: 021 912 3222

Dear Madam

CAPE FARM 1552, DUYNEFONTEIN: COASTAL WATERS DISCHARGE PERMIT APPLICATION FOR THE EXISTING DISCHARGE VIA THE COOLING WATER OUTLET BASIN AT KOEBERG NUCLEAR POWER STATION: PRE-CONSULTATION PROCESS

[IDEA Reference number: 2012/011/WC/Koeberg Power Station]

The Coastal Waters Discharge Permit Application and draft Technical Assessment report, dated May 2016, pertaining to the above refers.

1. It is noted that no additional infrastructure are being proposed as part of this permit application. This application is necessitated in order to align the existing coastal water discharge process with the NEM: ICMA.
2. The City concurs that the theoretical Alternative one, being the discharge of cooling water to a municipal waste water treatment works (WWTW), is not pragmatic due to its negative operational impact on the existing available municipal WWTWs.
3. The City takes note of the conclusions and recommendations reached in Section 6 of the draft Technical Assessment report, dated May 2016, as compiled by Advisian. In light of the aforementioned the recommended (1) monitoring programme, (2) continued intertidal beach monitoring and (3) investigation of potential benefits from modifying chlorination procedures and hydrazine discharge practices are encouraged.

The City now awaits the Competent Authority's decision. Kindly provide a copy of the said decision, once received, to the City for its record purposes.

Yours faithfully

(for) REGIONAL MANAGER: ENVIRONMENTAL & HERITAGE MANAGEMENT: Northern Region

From: [Penny](#)
To: [Pontac, Kim \(Advisian\)](#)
Cc: info@pierrejenkins.com
Subject: Koeberg Discharge
Date: Wednesday, July 06, 2016 6:18:28 PM

Dear Kim,

I read the article in the Tygerburger, 6 July 2016, "Have Your Say On Koeberg Discharge"

Can you give me any additional information?

Can you also share the diagram you mention in your article which you used to illustrate the workings of the power station?

Is this discharge in anyway harmful to the environment & residents living close by or walking or swimming on the beach?

Kind regards
Penny Jenkins
082 998 0752

From: [Els, Robert](#)
To: [Pontac, Kim \(Advisian\)](#)
Subject: Koeberg NPS CWDP
Date: Friday, July 08, 2016 1:52:38 PM
Attachments: [image001.jpg](#)
[Article in Newspaper.pdf](#)

Hi Kim,

I line in Sunningdale and read the attached article in the local paper and am interested in the project.

Please can you send me further details regarding the documents available for review.

Kind regards,

Robert Els
Senior Consultant



WSP | Parsons Brinckerhoff, Environment & Energy, Africa

The Pavilion, 1st Floor, Corner Portwood and Beach Rd, Waterfront, Cape Town, 8001, South Africa

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This email and all contents are subject to the following disclaimer: <http://www.wspgroup.com/en/Welcome-to-WSP-Africa/WSP-Africa/Disclaimer>

WSP Environmental (Pty) Ltd, Registered Office: WSP House, Bryanston Place, 199 Bryanston Drive, Bryanston, 2191, South Africa
Registered Number: 1999/008928/07 South Africa

From: [Lawrence Molele](#)
To: [Pontac, Kim \(Advisian\)](#)
Subject: KOU coastal discharge permit
Date: Friday, June 03, 2016 8:55:06 AM
Attachments: [20160603074512082.pdf](#)

Morning Kim,

Can you please send me the PDF of the attached document.

Best regards
Kealeboga Molele (Pr. Eng, M Eng, B-Eng)
Snr Nuclear Engineer (Eskom)
(011) 800 3423
079 377 9498

I'm part of the 49Million initiative...
www.eskom.co.za/idm

NB: This Email and its contents are subject to the Eskom Holdings SOC Limited
EMAIL LEGAL NOTICE which can be viewed at
http://www.eskom.co.za/Pages/Email_Legal_Spam_Disclaimer.aspx

From: Online2606841@telkomsa.net
To: [Pontac, Kim \(Advisian\)](#)
Subject: koeberg discharge
Date: Friday, July 08, 2016 10:50:13 AM

I saw the article on the above and as a concerned resident would like more information please.

S little



Advisian

WorleyParsons Group

Appendix H Minutes of Meetings





Minutes of Meeting

Project No: C00278

Project: COASTAL WATERS DISCHARGE PERMIT APPLICATION FOR THE EXISTING DISCHARGE VIA THE COOLING WATER OUTLET BASIN AT KOEBERG NUCLEAR POWER STATION

Meeting Name: Authorities meeting

Date: 20 June 2016

Start Time: 13h00

Finish Time: 15h00

Location: DEA (Oceans and Coast) Offices, V&A Waterfront, Cape Town

Applicant: Eskom

Attendees: Raissa Philibert (Lwandle) (NP)
Robin Carter (Lwandle) (RC)
Robert Moffat (Eskom) (RM)
Deon Jeannes (Eskom) (DJ)
Kim Pontac (Advisian) (KP)
Ryan Jonas (Advisian) (RJ)
Stephen Luger (PRDW) (SL)
Pierre-Malan Hugo (PRDW) (PH)
Lusanda Mtyotywa (DEA) (LMT)
Lungiswa Mgxwati (DEA) (LMG)
Rueben Molale (DEA) (RMO)
Nitasha Baijnath-Pillay (DEA) (NBP)

Apologies: Michelle Herbert (Advisian)

Recorder: Ryan Jonas

Doc No: DEA/MoM/01

File Loc: P:\Advisian Env & Society\A. Active Projects\C00278 Koeberg Env & PM Services\TO 2 - CWDP & Rezone\C00278 Koeberg CWDP\03. Reports\Authorities Meetings

Copies:

Action Items

No	Description	By whom	By when
1	OneWay Moment	KP	
2	CWDP Presentation		



-
- KP presented the CWDP Application, the legal framework and the application process including proposed public participation process;
 - DJ presented the general makeup of the discharge and where in the plant it stems from;
 - PH presented the Dispersion Modelling Study and its outcomes;
 - RC presented the Marine Ecology Study and the results of the Assessment, including the conclusion and recommendations.
-

3 Discussion

NBP: indicated that the DEA: O&C are currently in the process of updating the Water Quality Guidelines (WQG) (dated 1995) which shall be rolled out in a phased approach. No dates can be provided at this stage only that it's in the pipeline. The DEA has agreed to the use of the Assessment Framework for the Management of Effluent from Land Based Sources Discharged to the Marine Environment (Anchor, 2015) as a guideline for this application. Though this document was drafted as an internal guideline, and some of the sections may no longer be in the Regulations particularly reference to 'mixing zones'. It is understood that the listed 'mixing zones' were used as a guideline in our specialist studies i.e. the Dispersion Modelling Study and due to the policy vacuum, this is acceptable for now. Also, the Department is in agreement that public participation is not a legal requirement of the NEM:ICMA and is up to the discretion of the applicant.

The work that has been conducted to date should add value to the submission, and will be taken into consideration during the decision-making process.

DJ: the application and supporting documentation is based on the 2015 DEA Assessment Guideline documents, and it is requested that this submission is evaluated to these requirements.

NBP: Based on the presentation and the face-value of the supporting documentation, it seems that all is in order and that a lot of work has been put into the submission and everything of the prerequisite information has been covered. The DEA will now extract what is needed and evaluate the submissions' compliance to the prescripts that is currently coming out in the Guidelines and draft Regulations. This shouldn't be a long wait as such, and depending when the final submission was made the permit may be issued in this financial year or the next. The draft permit shall be presented to Eskom, to provide clarity on the permit conditions imposed therein and to synchronise mitigation measures already implemented on site, and to amend any incorrectness in the permit. This will be done before the permit is issued.

DJ: reference is made to draft Regulations, are these for CWDP's and what is the envisaged date these shall come into effect?

NBP: Yes, this is Regulations specifically for CWDPs. Public participation is expected to commence at the latter part of this year. The Department is currently still in the drafting stages and still has to go through a Socio-Economic Impact Assessment, etc., and then be presented for comments hopefully from September to November for public comment. Though, rest assured nothing surprising shall be presented in the Regulations, changes are more on the administrative sections (i.e. what needs to be provided to the Department to make an informed decision). Some of the



very technical sections are not presented therein, as this will be an Administrative piece of legislation. In any case the technical requirements are already covered in the application form, which Eskom has already provided in this submission. And the technical requirements are more for new applications and not existing as is in this case. However, should critical information be lacking, the Department shall request these in due time.

DJ: It is then assumed that the Department shall provide Eskom with a written letter in the near future, stating the comments or issues that need to be addressed or then the application can formally be submitted for approval/consideration.

NBP: Eskom will be provided with an Acknowledgement of Receipt letter, and then the submission shall go through the initial assessment. Only after the initial assessment phase, and there are any outstanding information will the Department issue a request for such information or state the submission complies with the prerequisites. There after it shall proceed to the detailed assessment phase.

KP: For interest sake when is the Departments financial year-end?

NBP: 31 March.

SL: The Department has alluded to mixing zones sizes and the Anchor document possibly being changed?

NBP: The Anchor document was purely an exploratory exercise, the Department does acknowledge that these sizes cannot be applied generally across the board to all discharges in the different coastal zones and hence the Department is relooking these values and may consider these on a case-by-case basis. This is obviously dependent on the constituents and parameters of the effluent discharged including the receiving body, based on these the application will be expedited accordingly.

SL: Another anomaly of that document is with diffusers, the sum of the mixing zones, which is quit strange.

NBP: This issue is something the Department needs to rethink and how to apply it, not theoretically but practically, because not all plumes work within a defined space of a circle. This is something the Department is aware of, and the Dispersion Modelling Studies submitted in support of the application are very useful and assists in the determination of the monitoring points.

RC: The issue around new-build and existing discharges. The proposed draft Regulations/Policy is based on what the Department would like see and would obviously be applicable 100% to new-build. Is it then the expectation that existing discharges would then have to engineer themselves into compliance with those proposed Regulations/Policy?

NBP: This is not necessarily the expectation. Firstly, there is a phased-in approach with certain discharges that we are looking at that perhaps has the potential to have long-term impacts. Hence the phased-in approach to getting to where the Department wants to go, which may require engineering or land-based treatment etc. Where-else in some instances, the ecological reports show that there is no to insignificant impact and that the Department can forgo any kind of restriction that may be placed or engineering requirements that could be placed to modify the discharge. Again, each application will have to be evaluated on a case-by-case basis. Also it's not an expectation that all applicants can comply immediately, especially for existing discharges. Here communication and consultation will be required with the applicant, as this will have a socio-



economic impact.

RC: The provision of the updated Water Quality Guidelines can you provide more detail?

NBP: The Department is in the process of exploring evidence of what needs to be updated and why the Guidelines should be updated, including the extent or capacity etc. After which the drafts would be circulated for public comment and stakeholder workshops. The envisaged timeframes are expected towards the latter part of this year or possibly next year; however final drafts are only expected next year. For this project, I think the Department proposes to present one stakeholder workshop, where the proposed adequacy/inadequacy of the proposed Guidelines will be discussed. Eskom, including all other existing discharges will be invited for this workshop.

RC: The biggest issues, is getting to the point of how real is your protection level, and is beginning to understand of how the receptors responds rather than some artificial limit in the constituent. And if you have enough data, you can get to the point where you can actually have response curves, and that may be the aim of the Department - where you need to get to this step.

NBP: That is already part of the requirement, with the existing data, and what that has been telling us ito of the natural receiving environment and everything else.

Meeting adjourned.



Advisian

WorleyParsons Group

Attendance Register

Meeting Name:	C00278 Koeberg Nuclear Power Station Coastal Waters Discharge Permit Application – Department of Environmental Affairs (Oceans and Coasts) Presentation
Date:	20 June 2016, 13h00
Venue:	DEA (Oceans and Coasts) Offices V&A Waterfront

Name	Position	E-mail	Signature
Raissa Philibert	Senior Marine Scientist-Lwandle	raissa@lwandle.co.za	
Robin Carter	Marine Ecologist	robin@lwandle.co.za	
Robert Moffat	Engineer – Koeberg/Eskom	moffatr@eskom.co.za	
Lusanda Mtshywa	EO: CPM	lmtshywa@environment.gov.za	
Lungiswa Mgxwathi	EO: CPM	lmgxwathi@environment.gov.za	
Ruben Molale	EO: CPM	rmolale@environment.gov.za	
Ryan Jones	Eskom Project Team	Ryan.Jones@advisian.com	
Deon Jeanes	Eskom.	deon.jeanes@eskom.co.za	
Kim Pontac	Env. Consultant ADVISIAN	Kim.Pontac@advisian.com	
STEPHEN LUGER	TECHNICAL DIRECTOR	SLUGER@PRDW.COM	
Nitasha Baijnath-Pillay	Control EO: GrB -DEA	Nbpillay@environment.gov.za	
Pierre-Malan Hugo	Engineer, PRDW	phugo@prdw.com	



Minutes of Meeting

Project No: C00278

Project: COASTAL WATERS DISCHARGE PERMIT APPLICATION FOR THE EXISTING DISCHARGE VIA THE COOLING WATER OUTLET BASIN AT KOEBERG NUCLEAR POWER STATION

Meeting Name: Authorities meeting

Date: 21 June 2016

Start Time: 10h00 **Finish Time:** 14h00

Location: DEADP Offices, 1 Dorp Street, Cape Town

Applicant: Eskom

Attendees: Raissa Philibert (Lwandle) (RP)
Robin Carter (Lwandle) (RC)
Robert Moffat (Eskom)
Deon Jeannes (Eskom) (DJ)
Kim Pontac (Advisian) (KP)
Ryan Jonas (Advisian)
Stephen Luger (PRDW) (SL)
Pierre-Malan Hugo (PRDW)
Darryl Colenbrander (City of Cape Town) (DC)
Zayed Brown (DEA&DP) (ZB)
Anthony van Wyk (DEA&DP) (AvW)
Melanese Schippers (DEA&DP) (MS)

Apologies: Michelle Herbert (Advisian)

Recorder: Ryan Jonas **Doc No:** Commenting Authorities/MoM/01

File Loc: P:\Advisian Env & Society\A. Active Projects\C00278 Koeberg Env & PM Services\TO 2 - CWDP & Rezone\C00278 Koeberg CWDP\03. Reports\Authorities Meetings

Copies:

Action Items

No	Description	By whom	By when
1	OneWay Moment	KP	
2	CWDP Presentation		



-
- KP presented the CWDP Application, the legal framework and the application process including proposed public participation process;
 - DJ presented the general makeup of the discharge and where in the plant it stems from;
 - PH presented the Dispersion Modelling Study and its outcomes;
 - RC presented the Marine Ecology Study and the results of the Assessment, including the conclusion and recommendations.
-

3 Discussion

AvQ: Question on the KCWIB and the dredging, where does the sediment go to? Does it just get moved from where it was dredged?

DJ: Referring to the Figure – the black pipeline depicted is the dredging discharge line. The sediment gets dredged out of the KCWIB and gets discharged about 50 m south of the KCWOB.

AvQ: Would the discharge of dredged material not have any impact to the receiving environment, as now the heavy metal sediment (which already has exceedances) is moved from the confined area in the KCWIB, to here?

RC: The discharge would have no impact on the receiving environment, as the discharge area is a wave active zone / dissipative zone; basically dispersion happens due to the waves. The sediment which is removed from the KCWIB, according to the measurements that we have, meets all dredging guidelines and the fact that it is being discharged into a dissipative zone means greater dispersion, therefore we wouldn't expect any impact or risk to the receiving environment.

SL: A small proportion of the sediment will get back into the KCWIB, though according to the measurements there is no build-up.

DJ: I think an important thing from here to the recommendations of monitoring is that we do monitor the KCWIB for deposition of heavy metals, as this was the first time that sediment was being sampled for heavy metals. We now have one data point, and with future monitoring would be able to conclusively state if there is a build-up or not over time.

RP: Also in the cross-shore samples that were taken, they all had very low concentrations which support that conclusion of no risk to receiving environment due to distribution.

MS: Why the swop to the CWDP, if KNPS has an existing authorization?

KP: This is to align the activity with the newly promulgated NEM: ICMA, as the previous authorization was to of the NWA and those provisions have since been repealed. Also, the DEA is now the Competent Authority and now longer DWAS mandate.

MS: Is there a cut-off time for this transition?

KP & DJ: The NEM: ICMA does mention a 4-year transitional period, which has come and gone. Though during this time the existing authorization is valid.

DC: Will this presentation and minutes of meeting (MoM) be made available?



KP: That is correct; MoM will be circulated to all in attendance.

DC: Out of interest, why was the KCWOB constructed to the south of KNPS and not the north?

SL: The primary thing back then was especially engineering and the idea was when the wind is blowing from the south and the current is going northwards, that the water would be cold because of the upwelling. Then the water that gets sucked back into the KCWIB, because there is a risk of recirculation always (that the same hot water would get sucked in and get hotter and hotter due to recirculation), so when there is chance of recirculation when the current is going northwards this would ensure that the water sucked into the KCWIB is always cold or colder than the recirculated water. Whereas when the water is going south, it would tend to be warm and there would be a risk of recirculation.

DC: Is that similarly for the sediment that is discharged in the south?

SL: Most of the sediment that is discharged is fine, so most of that would not end up on the beach and due to dissipative action in that area would just end up further offshore. So this discharge point doesn't really make much of a difference.

DJ: Though there is a slow accumulation of sediment on the beach to the north over time.

DC: Is that indicative of a net south movement of sediment?

SL: Yes, I think there is a local fillet directly north, especially in winter. So basically there is a very small nett on this beach, pretty neutral. In summer it moves northwards and winter it moves southwards, because it moves both ways you get little bit of a fillet. Like on that beach, as you can see in the photographs, sometimes it's completely empty. So it's quit variable depending on the seasons. And the same on the north side beach.

DJ: We do monitor the high-water mark change and beach profiling (the accumulation / movement of sand) over the long term, this is done annually. Beach profiling is done on an ongoing basis to really understand the dynamics of the interaction of the power station with the receiving environment.

DC: Also with the ongoing EIA process for the Transient Interim Storage Facility (TISF) at KNPS, would these studies have to be redone should that authorization be approved?

DJ: The TISF wouldn't have any effluent; therefore that process wouldn't change anything. The only change that may occur is that there are some discussions to possibly link up a desalination plant, to co-discharge the effluent generated with the cooling water. If that does happen, then yes it would require a total new assessment. As the brine from the desalination plant would likely affect the density of the overall discharge plume, so future studies would have to show the effect of this.

SL: What is the status of the City's CWDP applications for Green Point, Hout Bay and Camps Bay?

DC: We are still in the process of collecting samples for analysis, which are being sent to the CSIR, both biological and water quality. The results of which will inform the process. As I understand it we haven't officially applied and still undertaking the required assessments.

DJ: Reminded attendees that comments are to be submitted by 02 August 2016.

Meeting adjourned.



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Attendance Register

Meeting Name:	C00278 Koeberg Nuclear Power Station Coastal Waters Discharge Permit Application – Commenting Authorities Presentation
Date:	21 June 2016, 10h00
Venue:	DEADP Offices, Utilitas Building, 1 Dorp Street, Cape Town

Name	Position	E-mail	Signature
RYAN JONAS	Eskom Project Management	RYAN.JONAS@advisian.com	
Pierre-Malan Hugo	Engineer - PRDW	phugo@prdw.com	
KIM PONTIAC	Env. Consultant Advisian	KIM.PONTIAC@advisian.com	
R. Carter	Marine Ecologist	robin@lwandle.w.za	
R. Philibert	Marine scientist	raissa@lwandle.co.za	
M. Easton	Intern: coastal management	Miche-Easton@capetown.gov.za	
DARRYL COLNBRAND	COCT	DARRYL.COLNBRAND@CAPETOWN.GOV.ZA	
ZAYED BROWN	D: PCM (DEADP)	zayed.brown@westerncape.gov.za	
Anthony v. Wyk	D: PCM	anthony.vanwyk@westerncape.gov.za	
R. Moffat	Engineer - Eskom	moffatr@eskom.co.za	
Melanie Schippers	Env. Officer DEADP: EIA	Melanie.Schippers@westerncape.gov.za	
STEPHEN LUGER	ENGINEER PRDW	SLUGER@PRDW.COM	



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Appendix I Public Safety Information Forum



Koeberg Public Safety Information Forum (PSIF)

Minutes of the meeting held on 30 June 2016

Venue: Visitors Centre, Koeberg Nuclear Power Station

Chairperson: Mr Sydney Stuurman

Deputy Chairperson: Natasha Leaner (newly appointed)

Name and Surname	Organisation	Present
Alhadeff, Leon	Resident	P
Arbuckle, Graham	Resident	
Anderson, Melville	Resident	
Beyl, Trudy	Resident	P
Boulanger, Catherine	Resident	
Browne, Peter	Resident	P
Clark, John	Resident	
Cupido, Dimitri	Resident	P
Desjardins, Peter	Resident	
Duval, Monique	Tygerburger	P
La Grange, Smokie	Resident	P
La Grange, Duval	Resident	P
Leaner, Natasha	PSIF Deputy Chairperson	P
Esau, Phillip	Resident	
Madima, Tenda	Resident	P
Mayhew, Robert	Resident	P
Mayhew, Sylvia	Resident	P
Maigrot, H (Mr)	Resident	
Maigrot (Mrs)	Resident	
Meyrick, M.A.C	Resident	
Nagan, Roy	Resident	
Oosthuizen, Liza	Resident	
Pannaye, Angelique	Resident	
Pistorius, Hendrik	Resident	
Potgieter, L	Resident	
Saayman, Desmond	Resident	
Slabbert J	Resident	
Sibanda, Sabelo	Resident	P
Speed, Belinda	Resident	P
Speed, Kenneth	Resident	
Stuurman, Sydney	PSIF Chairperson	P
Taylor John	Melkbosstrand Neighbourhood Watch	
Watney, Tertius	Resident	
Weaver, Z	Resident	
OFFICIALS		
Bakardien, Riedewaan	Koeberg Power Station Manager	A
Bruiners, Rodger	National Nuclear Regulator	P
De Wet, Joy	Eskom Koeberg Operating Unit	P
Dyabaza, Jongi	Senior Advisor Stakeholder Management: Eskom Koeberg Operating Unit	A
Engel, Kevin	Plant Manager, Eskom Koeberg Operating Unit	P
Franco, Johannes	Disaster Risk Management Centre	P

Joshua, Debbie	Senior Advisor Stakeholder Management: Eskom Koeberg Operating Unit	P
Nicholls, Dave	Eskom Koeberg Operating Unit	P
Phidza, Lewis	Manager: Stakeholder Management - Eskom Koeberg Operating Unit	P
Pienaar, Shaun	Communication Officer: Stakeholder Management, Eskom Koeberg Operating Unit	P
Pillay, Greg	City of Cape Town	A
Sataar, Haaroen	Eskom Koeberg Operating Unit	A
Silinga, Nangamso	National Nuclear Regulator	A
Steyn, Elmien	City of Cape Town	A
Thauge, Phina	National Radiological Waste Disposal Institute	P
Van Rensburg, Stephen	City of Cape Town	A

Abbreviation/definition list			
Abbreviation	Description	Abbreviation	Description
KNPS	Koeberg Nuclear Power Station	CoCT	City of Cape Town
KOU	Koeberg Operating Unit	IAEA	International Atomic Energy Agency
NNR	National Nuclear Regulator	DOC	Disaster Operations Centre
KPSIF	Koeberg Public Safety Information Forum	SABC	South African Broadcasting Corporation
ISO	International Standards Organisation	mSv (millisievert)	The millisievert (mSv) is a measure of the absorption of ionising radiation by the human body.
PSM	Power Station Manager	EP	Emergency Plan
SAPS	South African Police Service	UPZ	Urgent Protective Action Planning Zone
MW	Megawatts. A unit of measure - one megawatt is equal to one million watts.	Emergency	An event that requires taking prompt action, or the special regulation of persons or property, to limit the risk to people's health, safety or welfare, or to limit damage to property or the environment.
ECC	Emergency Control Centre	Evacuation	The rapid, temporary removal of people from the area to avoid or reduce short-term radiation exposure in the event of an emergency.
Emergency Plan	A document describing the organisational structures, its roles and responsibilities, concept of operation, means and principles for intervention during an emergency at	Plant	Nuclear power station with associated components, machinery, equipment or devices

	Koeberg.		
PAZ	Precautionary Action Zone	National Electricity Grid	The network of high-voltage power lines fed by the various power stations, which supplies electricity to the country.
LTI	Lost Time Injury	WANO	World Association of Nuclear Operators
NSRB	Nuclear Safety Review Board	Radiation	Energy released in the form of particles or electromagnetic waves during the breakdown of radioactive atoms.
Public Notification	Notification to the public of an emergency and the appropriate protective actions to be taken by using the installed siren and loudspeaker system, as well as local authorities, local radio and television station.	Sheltering	A protective action whereby members of the public stay indoors with windows and doors closed, to reduce their exposure to radioactive material in an emergency situation.
EIA	Environmental Impact Assessment		
Release	The controlled or accidental discharge of radioactive substances into the environment.	EMP	Environmental Management Plan
Accident	An unintended event, including operating errors, equipment failures or other mishaps.	Disaster Management	A continuous and integrated multi-sectorial, multi-disciplinary process of planning and implementation of measures aimed at: <ul style="list-style-type: none"> a) Preventing or reducing the risk of disaster b) Limiting the severity or consequences of disasters c) Emergency preparedness d) Responding rapidly and effectively to disaster; and e) Post-disaster recovery and rehabilitation
FCs	Functional Coordinators	EPSOC	Emergency Planning Steering and Oversight Committee
TEM	Traffic Evacuation Model	SAMGs	Severe Accident Management Guidelines
EPZ	Emergency Planning Zone	UPZ	Urgent Protective Action Zone
SHEQ	Safety Health Environment and Quality	KCWIB	Koeberg Cooling Water Intake Basin
Outage	Refers to the maintenance period on a power plant when a number of activities are performed on equipment that keeps the plant running.	FME	Foreign Material Exclusion
NOSA	National Occupational Safety Association	NOSCAR	The grading of NOSA for safety performance.
UAG	Unplanned Automatic Grid Separation	NERSA	National Energy Regulator of South Africa
SSA	Sea Shore Act	NSRB	Nuclear Safety Review Board
CCGT	Closed Cycle Gas Turbine	Hazmat	Hazardous material
IPP	Independent Power Producer	KEP	Koeberg Emergency Procedure
NECSA	South African Nuclear Energy	CCGT	Closed Cycle Gas Turbines

	Corporation SOC Limited		
WAC	Waste Acceptance Criteria	FA	Fuel Assembly
IPP	Independent Power Producer	CPA	Consumer Protection Act
Boron	A very hard, almost colourless crystalline metalloid element that in impure form exists as a brown amorphous powder. It occurs principally in borax and is used in hardening steel. The naturally occurring isotope boron-10 is used in nuclear control rods and neutron detection instruments.	ECC	Emergency Control Centre
OEM	Original Equipment Manufacturer	AECC	Alternate Emergency Control Centre
DOC	Disaster Operations Centre	TEM	Traffic Evacuation Model
CISF	Centralised Interim Storage Facility	SPF	Spent Fuel Pool
OCA	Owner Controlled Area	NRWDI	National Radiation Waste Disposal Institute

1. Opening and welcome

The PSIF Chairperson welcomed everyone to the PSIF Meeting.

2. Safety briefing

Ms Jenkins, Head of the Koeberg Visitors Centre, conducted the safety evacuation briefing, informing members about the safety protocol of the venue.

3. Apologies

The following apologies were tendered (30 June 2016)

- Ms Anne Lee
- Dr Elmien Steyn
- Mr Riedewaan Bakardien
- Mr Ian Trollope
- Mr Stephen Van Rensburg
- Ms Phindile Radebe
- Mr Gino Moonsamy

4. Matters arising from the previous meeting and minutes

The following corrections were noted.

Correction on page 6: remove the h from Councillor Nora Grose's name. Should be Nora Grose (not Norah Grose). Her name should also be preceded by Cllr.

5. Acceptance of the Minutes of the previous meeting (30 June 2016)

The Minutes were accepted by Mr Peter Browne and seconded by Mrs Smokie La Grange.

- 6.** The NNR representative Ms Victoria Seitei, on behalf of Mr Moonsamy, announced that the NNR Board appointed Ms Natasha Leaner as the new PSIF Deputy Chairperson. Ms Seitei mentioned that she has worked at Koeberg Nuclear Power Station and she is currently working for Lesedi Nuclear Services. She was congratulated on her new position.

7. Koeberg quarterly feedback - Mr Kevin Engel Koeberg Plant Manager

Mr Engel apologised for the absence of the PSM/GM Mr Riedewaan Bakardien and explained that his absence is due to it being the month of Ramadan.

First quarter feedback

Summary

- Both Unit 1 and 2 have been operating at full power since the PSIF of March 2016.
- Unit 1 – has been online for 393 days.
- Unit 2 - has been online for 201 days.
- New production record: two units on line for 200 days. The previous record was 184 days.
- Load reduction to 20MW the previous week, due to a chemistry excursion when a slug of SRI cooling water (tri-sodium phosphate) entered the feedwater when APP002 was placed in service after maintenance. This incident was regarded as a human performance error, which has been addressed accordingly.
- Next outage – Outage 122 due to start on 19 September 2016. We are well advanced to achieve our first refuelling outage of 35 days
- 100 new trainee operators appointed (artisans, technicians and engineers) for the nuclear operator pipeline.
- Improved Eskom performance
 - Much less diesel usage to meet the electricity demand
 - No load shedding for 10 months
 - 11% maintenance factor achieved
 - Energy Availability Factor (EAF) improved from 69% to 78%.

8. Koeberg coastal water discharge permit application – Ms Kim Pontac

Ms Pontac informed the members that due to time constraints, the presentation has been shortened. She indicated that detailed information is available at various public libraries and on the Advisian website.

Summary

Why does Koeberg Nuclear Power Station require a Coastal Waters Discharge Permit?

- The discharge activity is associated with the operation of the power station, which utilises large volumes of seawater for cooling purposes (temperature deviation).
- In addition to the cooling water discharge, industrial and domestic effluent is produced and is discharged along with the cooling water via the Koeberg cooling water outlet basin (KCWOB), which is situated south of the Koeberg cooling water intake basin.
- The project is divided into four phases; Pre application phase, stakeholder engagement phase, assessment phase and the final decision phase. Currently in the Stakeholder engagement phase. Once public participation process is completed on 2 August 2016, all written questions will be answered and attached to application document.

Question by PSIF Member

The member asked for details about the dispersion model used as well as what the parameters for the monitoring system are.

Response by Mr Jacob and Mr Moffat

Mr Jacob responded that a three dimensional hydronanic/hydromatic model was used. Mr Moffat illustrated the various points where monitoring takes place.

Question by Mr Collopy

Mr Collopy wanted to know how long this was modelled for and whether the wind direction was conducive to this kind of study.

Response by Mr Jacob

Mr Jacob responded that monitoring took place for one representative year in 2009; the year was selected due to it being a particularly high (background) temperature year with the water temperature being at 29 degrees Celsius (which is extreme)

9. Eskom's long-term Spent Fuel Management Strategy – Ms Phina Thauge

Summary:

- Eskom currently has 112 spent fuel assemblies in four Castor X/28F dry storage casks which are stored in the cask storage building (CSB) on the Koeberg nuclear power plant site.
- Koeberg Unit 1 and Unit 2 will have filled the capacity of its spent fuel pools by March 2018 (Outage 123) and September 2018 (Outage 223) respectively.
- Additional storage space will be required to accommodate any further spent fuel assemblies generated during production.
- If no additional storage space is created in the pools, this would lead to the premature shutting down of Koeberg units 1 and 2.
- Eskom's strategy covers on-site storage (pools and TISF), off-site storage (CISF), encapsulation and disposal of used fuel as HLW, but also keeping options for reprocessing open.
- National Radiation Waste Disposal Institute (NRWDI) is in the process of being operational and will establish the deep geological repository for high level waste and all associated pre-disposal facilities.
- Eskom to reach agreement with NRWDI, including the associated cost, for transferring the spent fuel to NRWDI for predisposal activities, e.g. storage and encapsulation, and eventual disposal.

Steps to the strategy:

1. Store spent nuclear fuel in the in the reactor pools at the reactor site for a period of at least 10 years and store excess old spent fuel in dry storage casks at a transient interim storage facility (TISF) on the Koeberg site.
2. Transfer the spent nuclear fuel into a centralised interim dry storage facility away from the reactor site and store it for a period of 40 years.
3. Transfer all spent fuel to an encapsulation plant and encapsulate it in disposal canisters.
4. Dispose of all spent fuel in a deep geological repository.

10. General

Question by Mr Lee

PSIF Member voiced his concern about dilapidated state of the the old NNR offices - he mentioned that the NNR emblem is still visible on the building.

Response by NNR representative

The NNR informed the members that the NNR is currently in the process of an application to demolish the old building and to build new offices in that area with new signage.

11. Date of the next meeting

The next KPSIF meeting is scheduled to take place at the Koeberg Visitors Centre from 19:00 on 29 September 2016.

12. Possible/proposed agenda points for next meeting

Mr Phidza advised that in the absence of agenda topic suggestions, Eskom and the CoCT will finalise the agenda

13. Closure

The PSIF meeting was adjourned at 20:23.

Coastal Waters Discharge Permit Application for Koeberg Nuclear Power Station.

Public Safety Information Forum
Presentation

Kim Pontac, Senior Environmental Scientist, Advisian
30 June 2016

www.advisian.com



Advisian

WorleyParsons Group

20 9:49AM



Introduction and Overview of Presentation

Project Background

- The legislative framework and application guidance
- CWDP Application Process
- Why Koeberg Nuclear Power Station requires a Coastal Waters Discharge Permit?

Technical Assessment Report

- Overview of the KNPS
- Sources of the Effluent, treatment and monitoring points
- Discharge point(s)
- Effluent characterisation
- Summary of Dispersion Modelling Specialist Study
- Summary of Marine Ecology Specialist Study
- Conclusion



Project Background

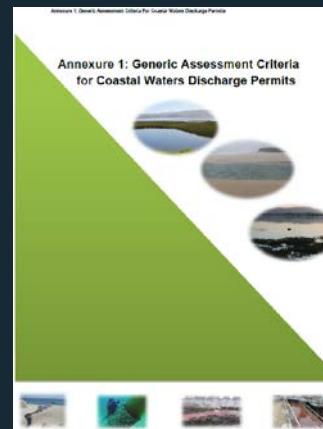
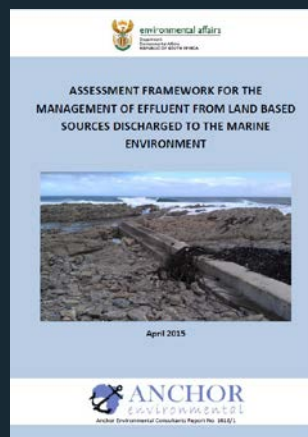
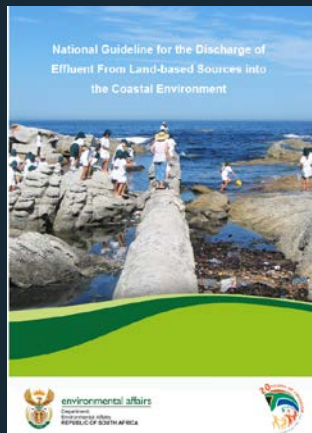
Legislative Framework

- Historical perspective – KNPS has an existing discharge authorisation under National Water Act, 36 of 1998 (NWA).
- National Environmental Management: Integrated Coastal Management Act, 24 of 2008 (NEM: ICMA), Section 69(3) CWDP thresholds – constituents of the discharge or temperature deviation from the receiving body of water.
- Seashore Act, 21 of 1935 – KNPS has two valid leases with the WC Nature Conservation Board.
- National Nuclear Regulatory Act, 46 of 1999 (NNRA) – Compliance with the nuclear installation license; as well as compliance and enforcement of the radiological discharge limits.

Project Background

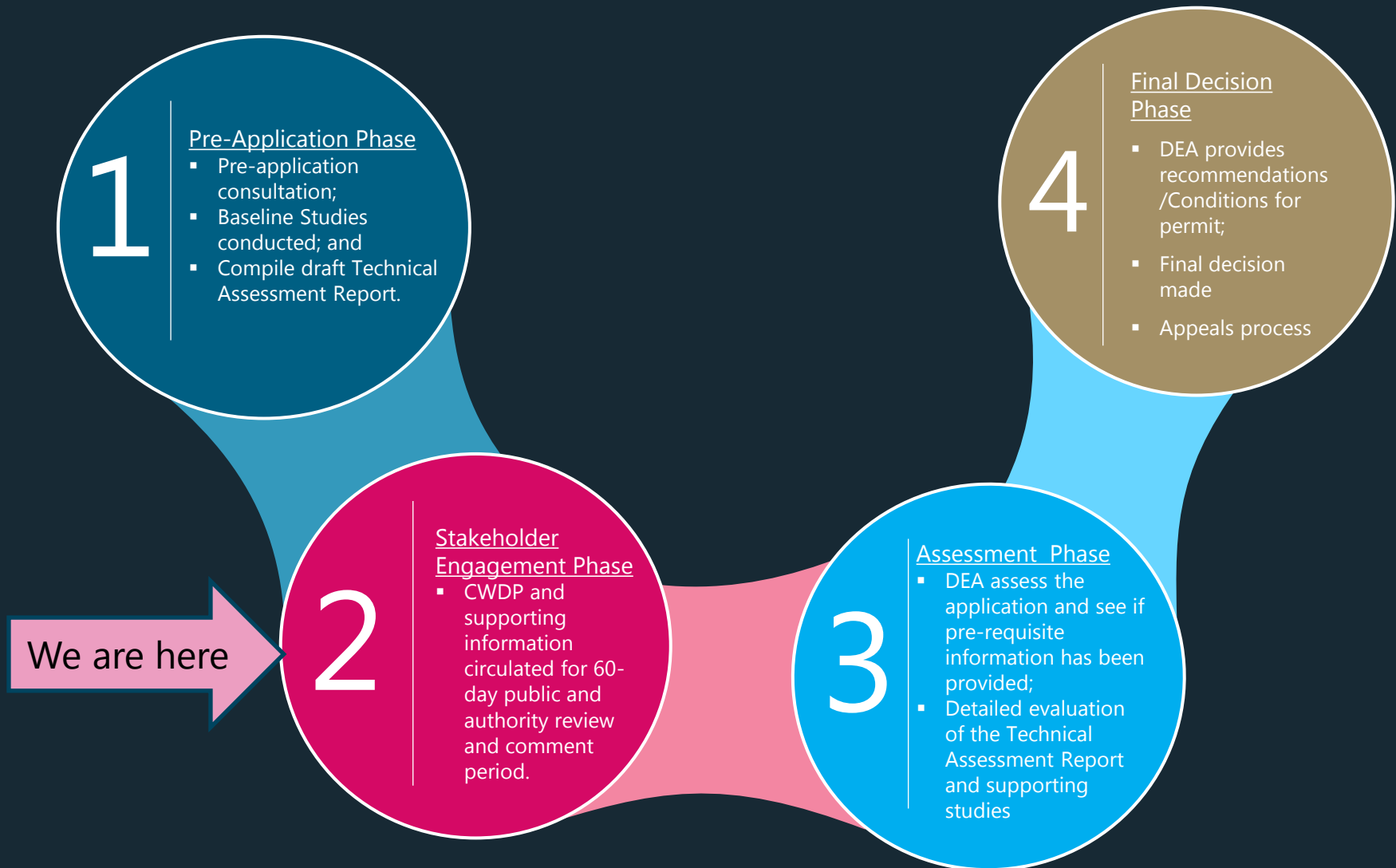
Applicable Guidance

- National Guideline for the Discharge of Effluent From Land-based Sources into the Coastal Environment (DEA, 2014);
- Assessment Framework for the Management of Effluent from Land Based Sources Discharged to the Marine Environment (DEA, 2015);
- Generic Assessment Criteria for Coastal Waters Discharge Permits (DEA, 2014); and
- Guideline on Public Participation Requirements for a Coastal Waters Discharge Permit Application (DEA, 2014).





CWDP Application Process



Project Background

Why Koeberg Nuclear Power Station requires a Coastal Waters Discharge Permit?



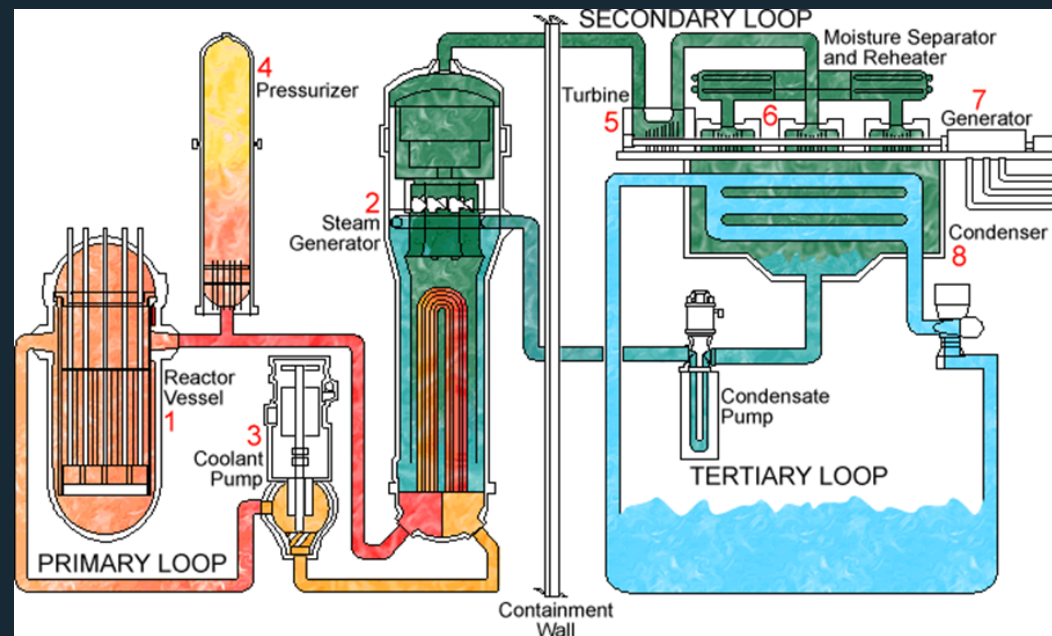
The discharge activity is associated with the operation of the power station, which utilises large volumes of seawater for cooling purposes (\therefore temperature deviation).

In addition to the cooling water discharge, industrial and domestic effluent is produced and is discharged along with the cooling water via the Koeberg cooling water outlet basin (KCWOB), which is situated south of the Koeberg cooling water intake basin (KCWIB), as shown in Figure 1 (\therefore effluent constituent).

Technical Assessment Report

Overview of KNPS:

- 3 separate water systems (i.e. primary, secondary and tertiary loops).
- Various industrial systems located within the 3 loops which produces effluent that is discharged off-site.
- Only 2 of the industrial systems produces radiological effluent, the rest are all non-radiological waste streams.
- The Stormwater system and Wastewater system operates separately from the systems used for the production of electricity.



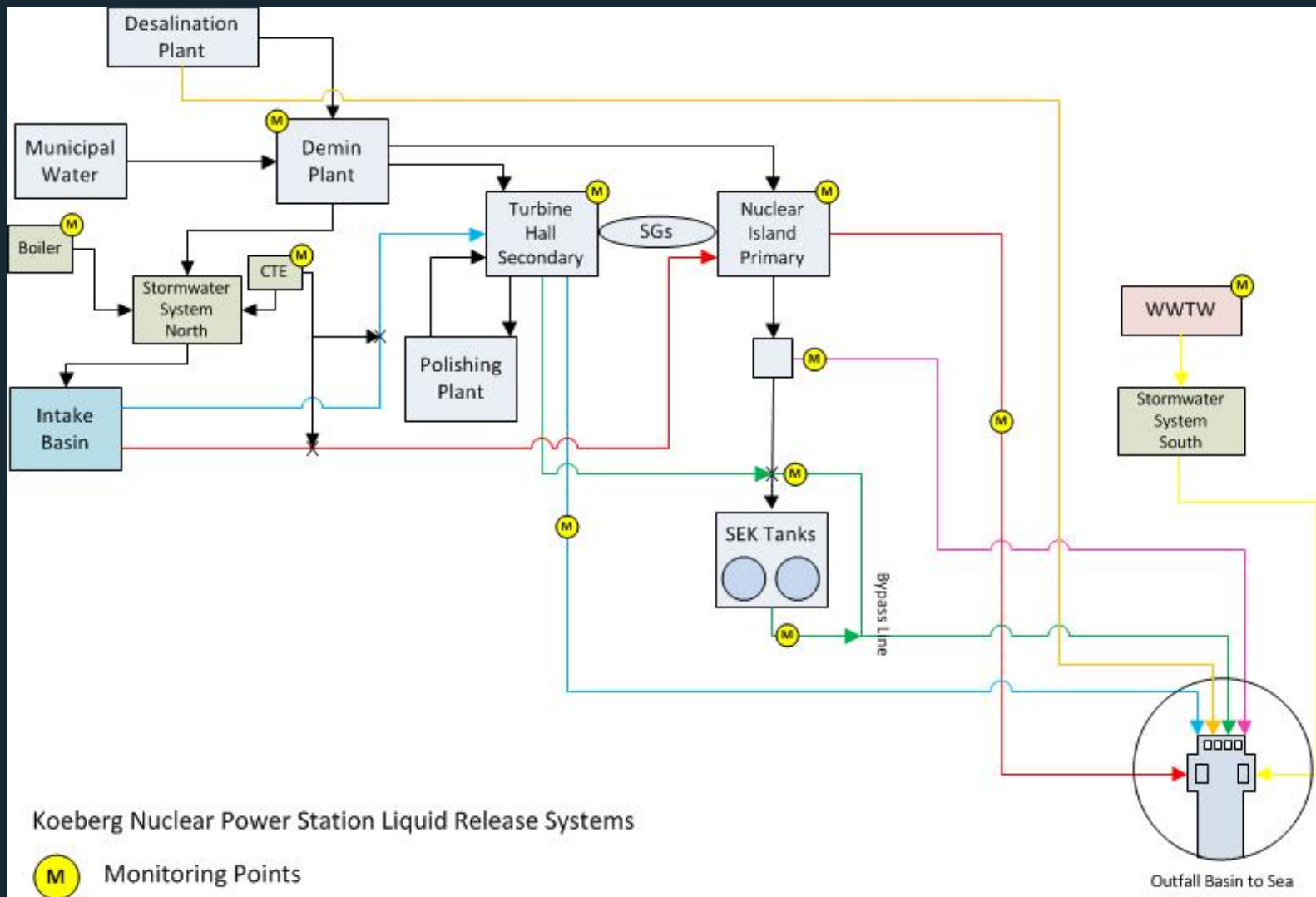


Treatment Processes

Treatment measures are applied prior to effluent discharge from each system/plant. Types of treatment measures applied at KNPS include-

- Demineralised Water Production: pH neutralisation
- Condensate Polishing Plant: pH neutralisation
- Chlorine Production Plant: pH neutralisation
- Waste Water Treatment Works: activated sludge process plant with sanitation
- Radiological Effluent (if not re-used or recycled): filters, ion exchange, evaporators, pH neutralisation

Schematic Flow Diagram – Effluent Sources and Monitoring Points



All industrial systems, including WWTW and stormwater system releases are monitored before discharge into the outfall basin.

Summary of Specialist Study – Dispersion Modelling & Ecology Assessment Study

Koeberg Coastal Waters Discharge Permit

Summary of Discharge Characterisation, Screening and Dispersion Modelling



2015-06-20



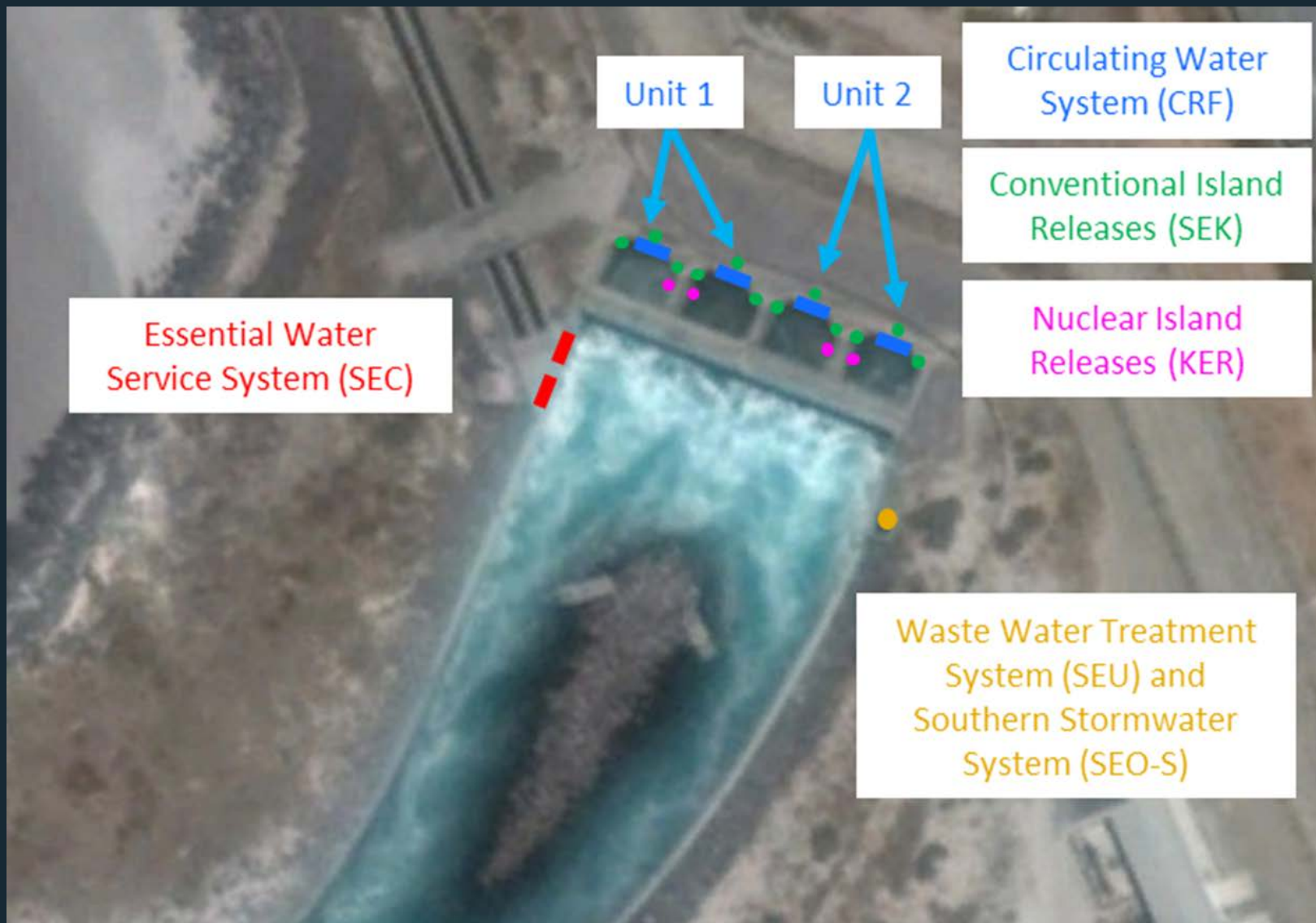
Cape Town, South Africa | Santiago, Chile | Peru



KNPS CWDP APPLICATION

Marine Ecology Specialist Study

Discharge Characterisation – Effluent Streams discharged at Outfall



Discharge Characterisation – Effluent Streams discharged at Outfall

Industrial System	Brief Description
▪ The Main Circulating Water System (CRF)	<ul style="list-style-type: none">▪ Main cooling water for the Conventional Island;▪ Continuous discharge at 327 900 m³/h;▪ Key constituents: Temperature, Free Chlorine.
▪ The Essential Service Water System (SEC)	<ul style="list-style-type: none">▪ Nuclear Island cooling water;▪ Continuous discharge at 12 700 m³/h;▪ Key Constituents: Temperature, Free Chlorine.
▪ The Secondary Releases System (SEK)	<ul style="list-style-type: none">▪ Tank receiving system designed to collect, monitor and discharge liquid effluent produced both within the conventional island and as a back-up discharge and storage system to the nuclear island;▪ Mainly a non-radiological effluent system, also contains radiological effluent which is included in this application;▪ Varying stream under normal operation (max 80 m³/h), otherwise collected in tanks (max 300 m³/h);▪ Daily discharges and exceptional discharges associated with outages;▪ Key Constituents: Hydrazine, Phosphates.

Discharge Characterisation – Effluent Streams discharged at Outfall

Industrial System	Brief Description
▪ The Radiological Effluent Discharge System (KER)	<ul style="list-style-type: none">▪ Effluent from Nuclear Island, radiological and non-radiological constituents▪ Batch releases from tanks at 25 m³/h, 150 tanks per year▪ Key Constituents: Radiological, Boron, Phosphates.
▪ The Stormwater System (SEO)	<ul style="list-style-type: none">▪ Collects stormwater from southern section of KNPS, and is used for the draining of Waste Water Treatment Works and Unit 2 Electrical Building Ventilation System.
▪ The Waste Water Treatment System (SEU)	<ul style="list-style-type: none">▪ Sewage and grey water from KNPS, including rest rooms, laundries and rain water drainage;▪ Peak flow of 28 m³/h;▪ Key Constituents: Treated sewage, Free Chlorine..
▪ The Electrical Building Ventilation System (DEL)	<ul style="list-style-type: none">▪ 20 m³/h, once per year during outage;▪ Key Constituents: Phosphate.

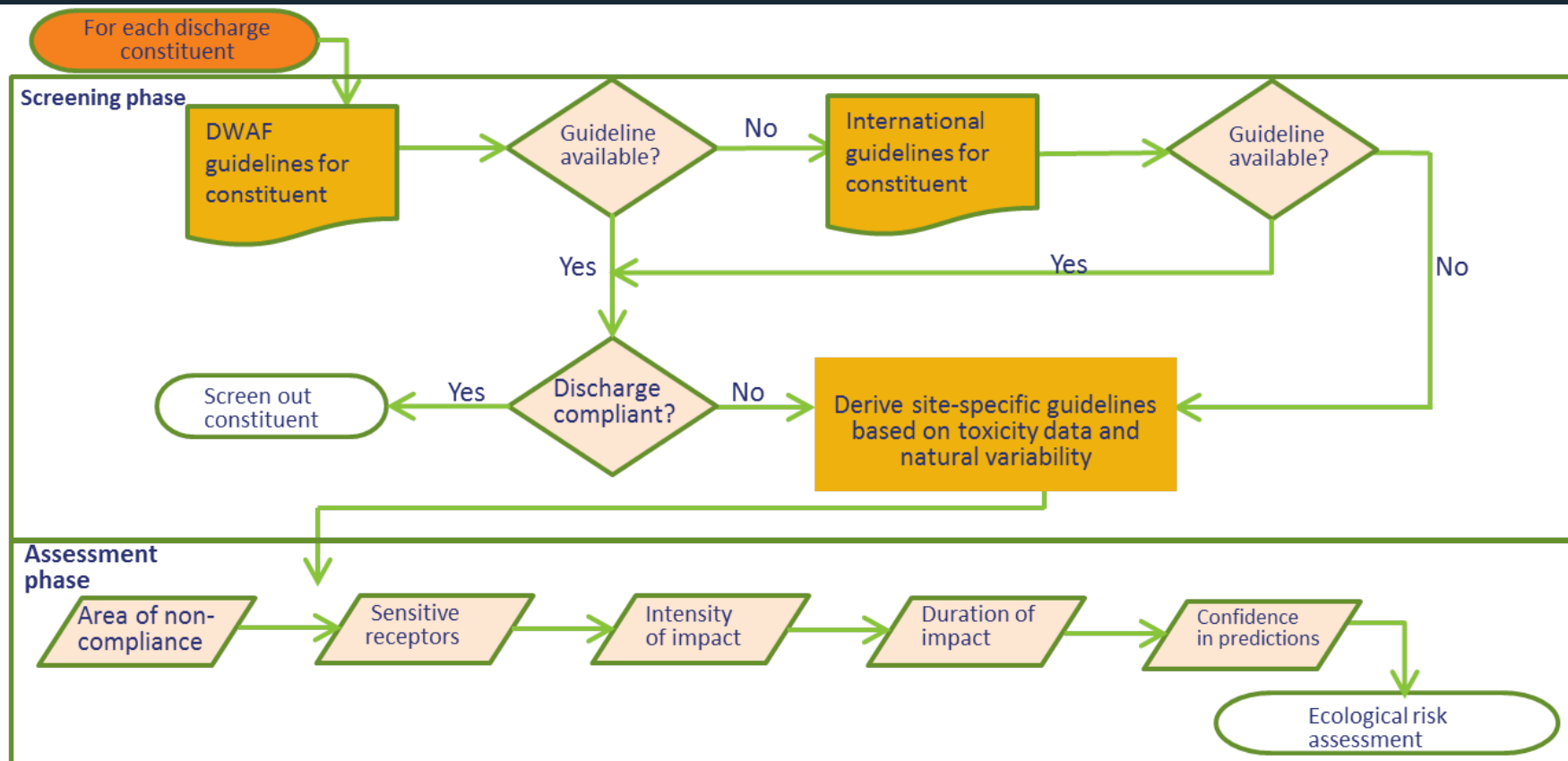
Discharge Characterisation – Effluent Streams discharged into Intake Basin



Discharge Characterisation – Effluent Streams discharged into Intake Basin

Industrial System	Brief Description
▪ The Auxiliary Boiler Plant System (XCA)	<ul style="list-style-type: none">▪ Draining of boiler water;▪ 60 m³/h, for 1/2 hour, once per month;▪ Exceptional discharge associated with outages;▪ Key constituents: Hydrazine, Ammonia.
▪ The Chemical Effluents System (SDX)	<ul style="list-style-type: none">▪ Effluent from Demineraliser Plant, ion exchange regeneration;▪ 400 m³/h, for 1 hours, twice per week;▪ Key constituents: Suspended Sediment, Sulphate, Sodium.
▪ The Demineralised Water Production Plant (SDA)	<ul style="list-style-type: none">▪ Flushing of demineraliser plant filters;▪ 100 m³/h, for 1 hour, once per week;▪ Key constituents: Suspended Sediment.
▪ The Chlorination Plant System (CTE)	<ul style="list-style-type: none">▪ Effluent from acid wash of electrolyzers;▪ 6 m³/h, for 2 hours, once per month;▪ Key constituents: Suspended Sediment, Chloride, Sodium.
▪ DEL-1 and SEO-N	<ul style="list-style-type: none">▪ Similar to DEL-2, 20 m³/h, once per year during outage;▪ Key Constituents: Phosphate;▪ SEO-N used for the draining of XCA, SDX, SDA, CTE, DEL-1.

Screening of Constituents – Methodology flow diagram

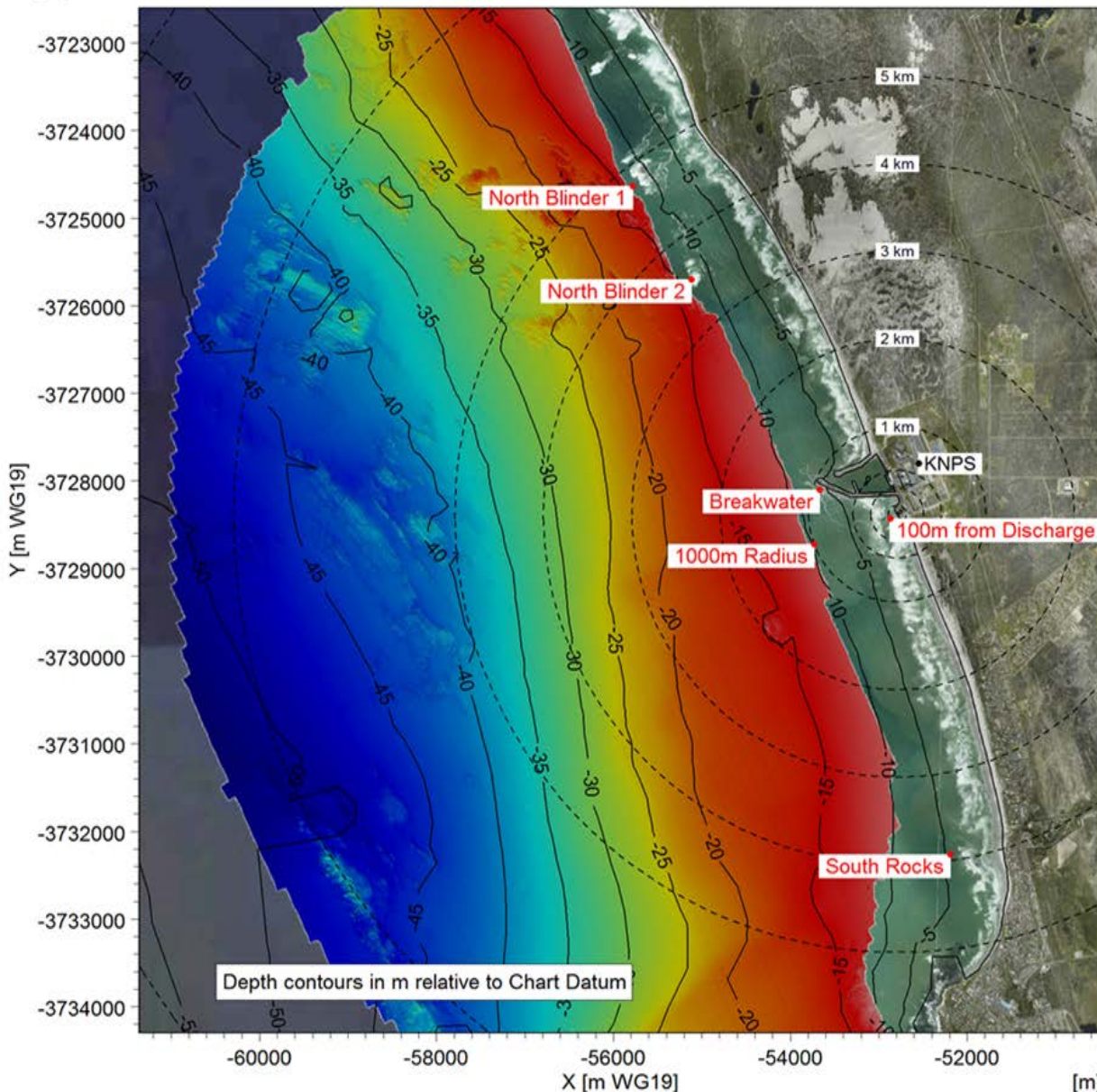




Description of receiving environment

- Ecology – The receiving water body for the KNPS is located in the centre of the seasonally variable southern Benguela Ecoregion. This is biologically productive, driven by upwelling which is most frequent and intense in spring and summer but does extend into autumn.
- Biodiversity – The facility lies in the South West Cape inner shelf ecozone which extends from Table Bay in the south to Cape Columbine in the north. Taxonomic distributions within the ecozone are uniform. The adjacent pelagic biodiversity zone (Aa1) extends from Table Bay northwards and out to the 150 m isobath. These are large features and are important commercial fishery areas and habitat for large fauna (birds, seals, whales and dolphin).
- Water Quality Objective – Given the importance of commercial fisheries in the region and their dependence on the basic oceanographic and biological processes that sustain ecological structure the 'maintenance of ecosystem/supporting function' is the derived water quality objective. This can be considered as having the strictest environmental (primarily water) quality objectives and is thus conservative.

Identification of sensitive receptor sites



- Environmental quality objective used = maintenance of ecosystem/supporting function
- Sites with potential sensitive species/high biodiversity value were identified
- Toxicity of constituents to taxa typical of such habitats were considered when establishing site-specific guidelines



Screening of Constituents – Results

Constituent	Unit	Maximum Concentration at end of outfall	Background Concentration	General Guideline	Required Dilutions	Site Specific Guideline	Required Dilutions
Temperature Increase (ΔT)	°C	11.8	ambient	1	12		
Abnormal Temperature Increase (ΔT)	°C	21.35	ambient	1	21		
Temperature Increase (ΔT)	°C	11.81	ambient	3	12		
Abnormal Temperature Increase (ΔT)	°C	21.35	ambient	3	21		
Absolute temperature (chronic effects)	°C					25	
Absolute temperature (acute effects)	°C					30	
Free Chlorine	mg/l	0.54	0	0.003	179	0.01	54
Abnormal Free Chlorine (Shock chlorination)	mg/l	6.292	0	0.003	2097	0.01	629
Trihalomethanes (THMs) – Bromoform	mg/l		0.00008	0.01	0	0.01	0
THMs – Dibromochloromethane (DBCM)	mg/l		-	0.005	0	0.005	0
THMs -Bromodichloromethane (BDCM)	mg/l		-	0.005	0	0.005	0
Total Suspended Sediment (TSS)	mg/l	0.699	4	4.4	0	4.4	0
Hydrazine	mg/l	0.11	0	0.0002	549	0.0025	44
Abnormal Hydrazine release	mg/l	0.187	0	0.0002	933	0.0025	75
Sulphate	mg/l	2 726	2 700	-	0	-	0
Sodium	mg/l	10 770	10 763	-	0	-	0
Aluminium Sulphate	mg/l	0.09	-	-	0	-	0
Ammonia	mg/l	0.21	0.015	0.6	0	0.6	0
Chloride	mg/l	23.06	19	400	0	400	0
Boron	mg/l	5.48	4.5	7	0	7	0

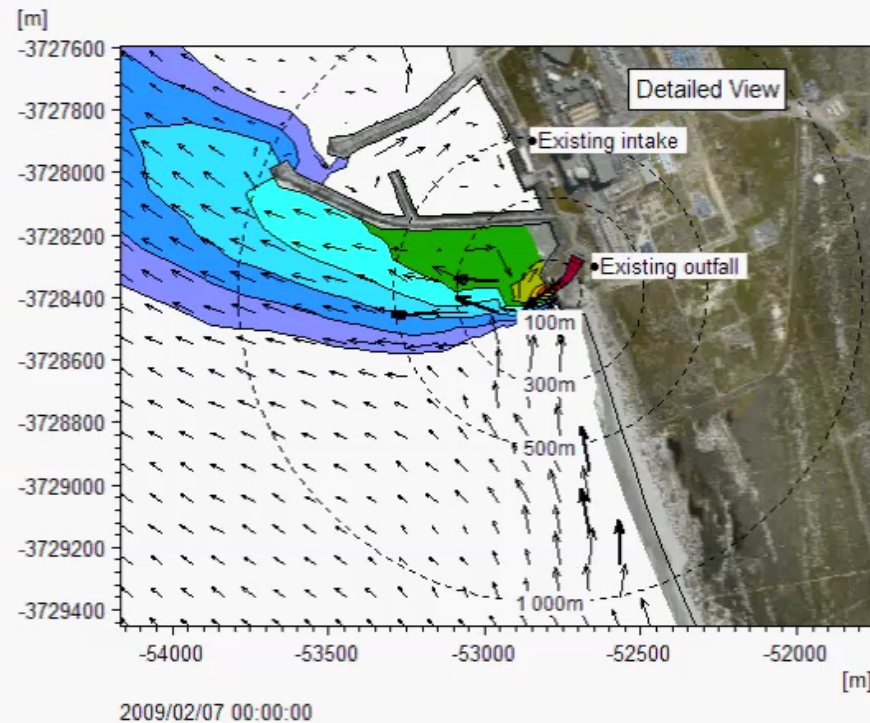
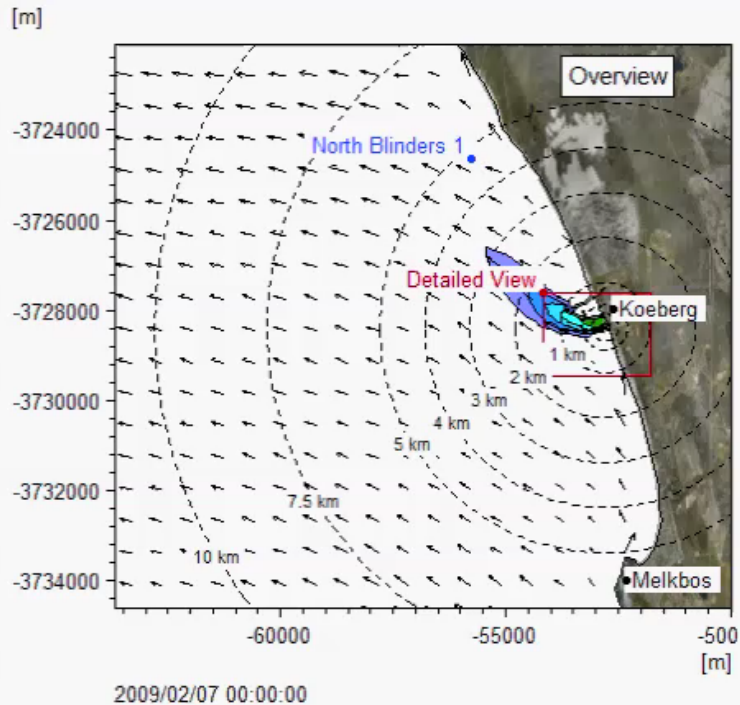


Screening of Constituents – Results continued

Constituent	Unit	Maximum Concentration at end of outfall	Background Concentration	General Guideline	Required Dilutions	Site Specific Guideline	Required Dilutions
Lithium Hydroxide	mg/l	0.1704	0.17	-	0	-	0
Phosphate	mg/l	0.54	0.037	0.053	32.0	0.053	32
Detergents - LAS	mg/l	0.027	0	0.033	0	0.033	0
Detergents –AES	mg/l	0.559	0	0.65	0	0.65	0
Detergents –AE	mg/l	0.122	0	0.14	0	0.14	0
Aluminium	mg/l	0.004	0.001	0.024	0	0.024	0
Copper	mg/l	0.0009	0.0008	0.0013	0	0.0013	0
Chromium	mg/l	0.004	0.00008	0.0144	0	0.0144	0
Iron	mg/l	0.0036	0.003	0.01	0	0.01	0
Manganese	mg/l	0.0011	0.0007	0.007	0	0.007	0
Nickel	mg/l	0.0042	0.00056	0.025	0	0.025	0
Lead	mg/l	0.003	0.00015	0.012	0	0.012	0
Zinc	mg/l	0.0034	0.0012	0.025	0	0.025	0
EDTA	mg/l	0.31	0	500	0	500	0
Citric Acid	mg/l	0.61	0.1	1	0	1	0
Ethanolamine	mg/l	0.012	0	0.09	0	0.09	0
Nitrates	mg/l	0.36	0.67	1.28	0	1.28	0
Nitrites	mg/l	0.0051	0.017	0.013	0	0.013	0
Faecal Coliforms	counts/100ml	0.47	0	20	0	20	0
BOD	mg/l	0.18	?	5	0	5	0
COD	mg/l	0.46	?	25	0	25	0
Oil/Grease	mg/l	0.05	0	15	0	15	0

Dispersion Modelling

Temperature: Animation of increase in temperature



0.2 m/s

Temperature [deg C]

Above 10
9 - 10
8 - 9
7 - 8
6 - 7
5 - 6
4 - 5
3 - 4
2 - 3
1 - 2
Below 1
Undefined Value



Alternative derivations for WQG – Temperature example

- General WQG: +1°C above ambient (DWAF 1995). This not met within any realistic 'mixing zone' so ecological risks assessed according to physiological/sensitive life stage thermal tolerance limit for taxonomic groups.
- Site specific chronic effects thresholds determined from published data on heat stress response, mid-latitude phytoplankton growth rates (below), mussel larvae and the local sand mussel (*Donax*). Threshold set at an absolute temperature of 25 °C.
- Site specific lethal effect threshold set at 30 °C primarily from measured effects on zooplankton that indicate the lower incipient lethal limit to be 30 – 33 °C.

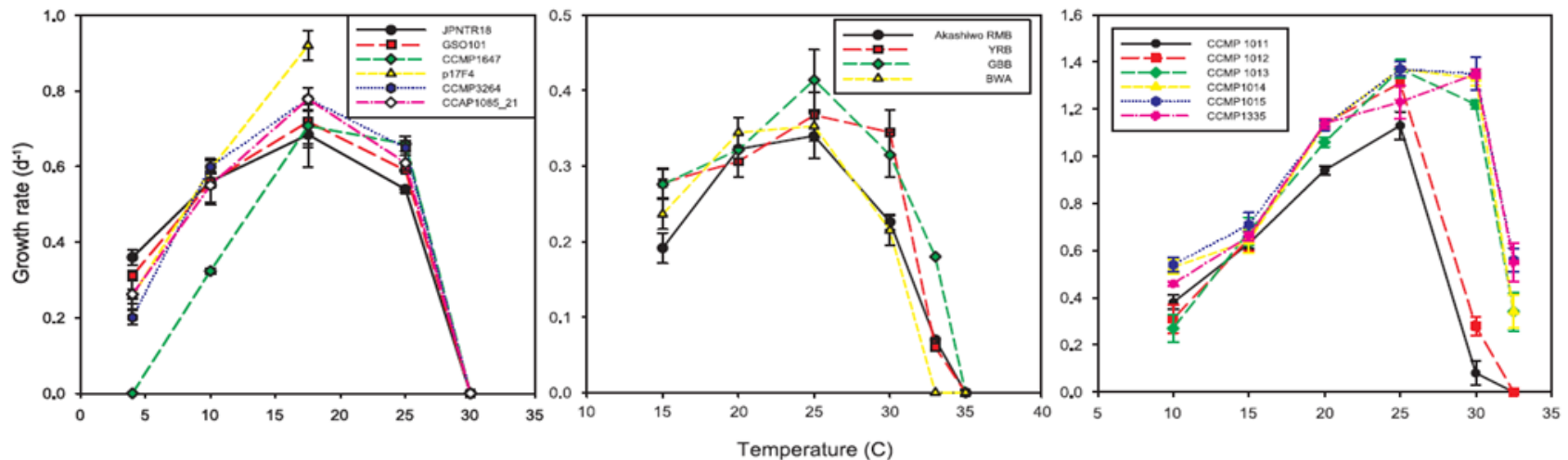
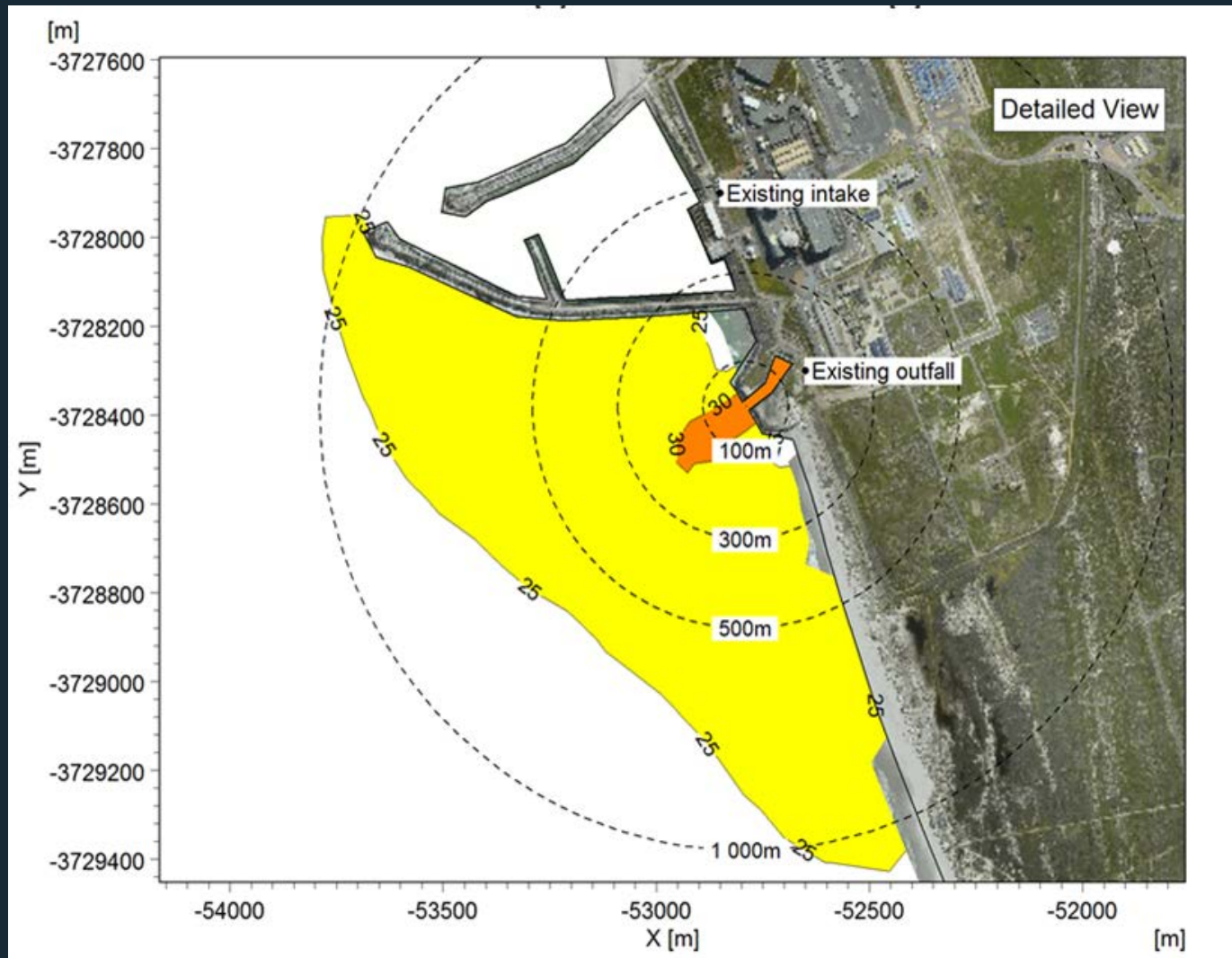


Figure 2. Thermal reaction norms for multiple strains of *Thalassiosira rotula* (left panel) *Akashiwo sanguinea* (central panel) and *Thalassiosira pseudonana* (right panel) used in our study.
doi:10.1371/journal.pone.0063091.g002

Site Specific WQG- Temperature non-compliance zones

- Modelled Temperature Distribution: Abnormal Conditions - Site Specific chronic & acute thresholds





Marine Ecology Impact Assessment Summary

Impact Type	Significance before mitigation	Mitigation	Significance post mitigation
Temperature guideline exceedances - normal ops.	High	Alternative cooling	Low
Temperaure elevation: Ecological risk - normal ops.	Very Low	n/a	n/a
Temperaure elevation: Ecological risk -abnormal ops.	Very Low	n/a	n/a
TRO guideline exceedances	High	Modify CI dosing	Medium
TRO discharge: ecological risk	Medium	Modify CI dosing	Low
Phosphate discharge: ecological risk	Very Low	n/a	n/a
Hydrazine discharge guideline exceedances	Medium	Modify discharges	Low-Medium
Hydrazine discharge: ecological risk	Low-Medium	Modify discharges	Low
Heavy metal build-up in deposition areas	Very Low	n/a	n/a



Marine Ecology Study Conclusions

- The specified limits for temperature, total residual oxidant (TRO), phosphate and hydrazine within the KNPS discharge plume is not compliant with established water quality guidelines;
- Risks to organisms within ~2 km of the discharge are limited to chronic effects;
- All predicted ecological impacts associated with the discharge were graded as being of low to medium significance;
- All water quality guideline concentrations were rated as high or medium significance due to large mixing zones; and
- Mitigation options have been identified to reduce the associated impacts, these will require feasibility assessments, including simulation modelling, and cost/benefit analyses before implementation.

Questions and Answers



Aerial Image of the Koeberg Cooling Water Outfall Basin (Source: PRDW, 2016).



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