

# REVIEW OF THE MARINE IMPACT STUDY FOR THE ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED NUCLEAR POWER STATION ('NUCLEAR-1') AND ASSOCIATED INFRASTRUCTURE

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## *General Comments*

My overall impression is that this study does not address potential impacts to the marine environment in sufficient detail given the nature of the project, and relies heavily on an EIA completed for the original Koeberg Power Station completed in 1984. The applicability of the latter study to Bantamsklip and Thyspunt, and even to Duynefontein in the present day, is dubious. The report is very vague about the extent, magnitude and timing of the impacts, which I find completely unacceptable for an assessment of this kind. It is littered with statements such as "limited area" and "temporary duration", few of which are quantified. These terms have very different meanings to different people. Few solid recommendations are provided for mitigation of identified impacts and recommended monitoring actions are barely adequate.

## *Specific comments*

1. Descriptions of the affected environment at each site is very thin and does not allow for a full evaluation of the sensitivity of the environment in question or significance of impacts to be evaluated in any detail.
2. Mention is made of the construction of a temporary dam 400 m offshore during the laying of the discharge pipes. No details are provided on how large this dam will be (and the hence size of the affected area) or exactly where it will be located at each site.
3. The impacts of dam are dismissed as being temporary. How long is temporary (days, weeks or months)?
4. The report refers to the impacts of the dam being related to physical disturbance of the sediment and smothering (Duynefontein site). This may be true for this site (which is mostly sandy beach) but certainly does not hold true for the other two sites which are mostly rocky coastlines with offshore reefs. No elaboration on this point is provided for the other sites. In the case of the Bantamsklip site the impacts is dismissed as follows "*the building of a temporary dam or basin will result in temporary disruption to the marine environment*". How long is temporary? What habitats and communities will be affected? How much habitat will be lost?
5. Impacts of offshore disposal of dredge spoil is reportedly minor. However maximum suspended sediment concentrations exceed the widely recognised 80 mg/l limit (or possibly even the 100 mg/l limit – this is not clear in the report) over "*a very limited area*".
6. Continuous lowlevel dosing with chlorine is proposed as a means of reducing biofouling on the seawater intake pipes. The impacts of this are dismissed as being "*very localised and are considered unlikely to have a significant negative impact on the receiving environment*" the source of which is the previous EIA for the Koeberg Power Station. A dosing level of 2 mg/kg is cited in the introductory sections of report. Is this the same as or less than that used for the Koeberg Plant? If not this statement has no validity whatsoever. No information is provided on the toxicity of chlorine to marine biota and the

breakdown rates of chlorine in the environment. The reason it is used as an antifouling agent is because it is toxic to marine organisms!

7. The authors also use the Koeberg EIA to dismiss entrainment of fish eggs and larvae by the intake pipes as being negligible: "Entrainment is also unlikely to have a negative impact on reproduction success of fish species, as 87% of fish eggs were found to survive passage through the cooling system". Was the viability (i.e. hatching success of the eggs) in this study ever examined, or did someone just check that the eggs were still intact (i.e. not burst or discoloured)?
8. The impacts of thermal pollution are also dismissed as being minimal. However, the authors note that the plume from the Koeberg Power station was not expected to extend beyond 1 km from the discharge point. They also note that the volume of effluent from the currently proposed plants is twice as great. Does this mean that the plume may extend as far as 2 km or more from the plant? Is this really a low significance impact?
9. The assessment of impacts from the desalination plant are also particularly thin. No information is provided on the size of the plant or of the volume of effluent that it will release. Brine from the plants will reportedly be discharged directly into the surf zone which, although very turbulent, is highly retentive and allows for very limited offshore dispersal of this effluent.
10. Recommendations for the proper monitoring of potential impacts of the plant are wholly inadequate. No provision is made for any water quality monitoring (temperature, salinity, oxygen). Thresholds of potential concern are not provided against which monitoring data need to be checked. For example, there should be a series of statements that list parameters that need to be monitored and thresholds that should trigger some mediatory action if these are exceeded. E.g. If temperature is elevated by more than 1°C above ambient at a distance of 1 km or more in the nearshore zone, then discharge pipe should be extended further offshore.