NAME & ORGANISATION	ISSUES/COMMENTS	RESPONSE
2. WASTE DISPOSAL (NUCLEAR)		
Mr Tim Barnard St. Andrew's College	▪ Nuclear waste disposal and storage.	Thank you for these comments. All aspects of nuclear waste management from source at the power station to final disposal are the domain of the National Nuclear Regulator and therefore are not covered in the scope of this EIA. Sewage disposal and disposal systems at the proposed nuclear power station site and other non-radioactive waste will be dealt with in the EMP. Radioactive waste is internationally categorised into three levels: **Using Koeberg as an example:** L**ow-level radioactive** waste consists of day-to-day refuse such as paper, gloves, plastic containers, disposable overalls, overshoes etc, which have low traces of radioactive contamination. It is compacted into metal drums (200 litre drums). These drums are transported by road to Vaalputs, the National Radioactive Waste Disposal site in the Northern Cape for near surface disposal. Vaalputs is managed by Necsa on behalf of the State, in terms of a licence issued by the National Nuclear Regular. The level of radioactive in the metal drums decreases with time; after approximately 30 years, the level of radioactivity is equivalent to natural background levels. **Intermediate level waste** consists of radioactive resins and sludges, spent filter cartridges and scrap pieces from maintenance work. Intermediate-level waste is solidified by combining it into a sand/cement mix, which is poured into concrete containers, which are transported to Vaalputs for near surface disposal. The level of radioactive in the concrete containers decreases with
Dr Piet Claassen PE Claassen Town & Regional Planner	▪ Disposal of radio active waste: o The long time that radio active waste takes to degrade to safe levels is a real problem which will eventually, two to three hundred years from now, necessitate the fazing out of nuclear power. Over the medium term however, finding space for storing nuclear waist safely is possible. An area of 50 km by 50 km in the Kalahari should provide enough space for hundreds of years. By that time alternative sources of energy may have been found, and if not, we shall need nuclear power even more than today.	
Dr Shirley Cowling Friend of St. Francis Nature Reserve	▪ Impact of transport of waste-to-waste storage site.	
Ms Claire Craxton Plettenberg Bay Environmental Forum	▪ Nuclear Waste o We need written undertakings from your department regarding the disposal of nuclear waste? o According to reports there are containers of waste already sitting at Koeberg with nowhere to go, if this is the case should the government not first try and resolve the waste problem for Koeberg before creating more? o How long does it take for the waste to lose its radioactivity? o What environmental impact will this waste have and for what period of time?	
Mr Sithembele P Cunge Grahamstown Tree Planting Project	▪ Chemical processes (matter cycling which is disrupted by waste and pollution). ▪ "Though the Montreal Protocol (1990) South Africa is committed to phasing out the production of substances which damage the ozone layer. ▪ State of the environment in South Africa for schools"?	

NAME & ORGANISATION	ISSUES/COMMENTS	RESPONSE
Mr Rudiger Dahlhaeuser Interested Party	▪ Conception for waste disposal ▪ Conception for final disposal of waste and fuel ▪ Conception for the transport of radioactive fuel rods and radioactive waste	time; after approximately 300-400 years, the level of radioactivity is equivalent to natural background levels. **Spent fuel** or h**igh-level radioactive waste:** The spent fuel is retained at Koeberg in spent fuel storage facilities (pools and casks) licensed by the National Nuclear Regulator. The pools and casks have sufficient capacity for the 40-year design life of Koeberg. The SA Cabinet approved a National Radioactive Management Policy and Strategy in 2005. The Department of Minerals and Energy (DME) is currently drafting legislation to implement the Policy. Two options for the long term management of spent fuel are possible: (a) direct final disposal of the spent fuel in a deep underground geological disposal facility, or (b) reprocessing of the spent fuel to extract unused uranium and plutonium for re-use and concentration and disposal of the residual (about 3-4% of the spent fuel) high level waste in a deep underground geological disposal facility. Both options are being pursued internationally. The radioactivity of some of the materials in high-level radioactive waste decreases back to natural levels within relatively short periods of time. Other materials however remain radioactive for several thousands of years. Hence the need to dispose of high-level radioactive waste in deep geological disposal facilities where it is isolated from the environment. For the proposed nuclear power station, Eskom intends to follow the same practices for the management of radioactive waste as discussed above, under the regulatory control of the National Nuclear Regulator and subject to the requirements of the National Radioactive Waste Management Policy and Strategy and any associated legislation or regulations.
Mr Ryan Donnelley Founder and chairperson of F.A.C.T. (For A Clean Tomorrow)	▪ We object to the fact that radioactive waste remains hazardous for more that 240 000 years. It is in disregard of future generations to come and our constitution. ▪ Where will the Radio Active waist be dumped?	
Mr Mike Kantey Watercourse cc	Issues to be addressed by Scoping Report: ▪ Description of Final Storage of High-Level Nuclear Waste (spent fuel), AFTER temporary storage at all sites.	
Mr Julius Koen Department of Tourism Environment and Conservation	▪ How and where will waste be stored?	
Ms Melissa Krige Interested Party	▪ Transportation of waste on public road.	
Dr Laurine Platzky Premier – Western Cape	▪ What will happen to the waste generated by the nuclear power station?	
Mr Carl Knauff South Durban Community Environmental Association	▪ Disposal of waste especially nuclear waste. ▪ I will like to have information regarding the process of nuclear waste disposal practice in South Africa.	
Ms Sarien Lategan Interested Party	▪ Transport of waste-to-waste dumps -Vaalputs?	
Mr M Phalane Earthlife Africa	▪ Transport of fuel.	
Mr KK Ravishanker Umbilo Secondary School	▪ What will become of the nuclear waste - dumping sites?	
Prof E N Van Schaik Botanical Society of SA	▪ Estimation of nature and volume of radioactive waste (what nuclides with what half-life and how much of each). ▪ Plans for storage of radioactive waste.	

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	▪	The National Radioactive Waster Repository, Vaalputs, in Namakwaland which stores low and intermediate level waste has only used less than 2% of its capacity after 23 years of Koeberg's operation, and hence and enough storage capacity for the envisaged programme. The transporting of nuclear waste is in accordance with the International Atomic Energy Agency (IAEA) " Regulations for the Safe Transport of Radioactive Material" (ST-1 of 1996). The National Nuclear Regulator (NNR) applies these regulations in South Africa. This includes the approval of licensed containers or packages for raw material and nuclear fuel. The packages are subject to strict integrity requirements for impact, fire, immersion, penetration etc. Radioactive waste is presently transported by road in specially designed vehicles owned and operated by a contractor. Low-level material in metal drums and medium level material encased in concrete are utilized for transportation. These methods meet international standards. There have been no incidents in the more than 20 years that radioactive waste material has been in transit and nothing has been released into the environment. Each spent fuel assembly contains radioactive materials that fall into three categories. The first category contains the fission products such as Caesium, Iodine, Strontium, and Xenon which are created during the nuclear fission process.

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Mr Byran Andrews	▪ Nuclear waste!!	Thank you for these comments. All aspects of nuclear waste management from source at the power station to final disposal are the domain of the National Nuclear Regulator and therefore are not covered in the scope of this EIA. Sewage disposal and disposal systems at the proposed nuclear power station site and other non-radioactive waste will be dealt with in the EMP. Radioactive waste is internationally categorised into three levels: **Using Koeberg as an example:** L**ow-level radioactive** waste consists of day-to-day refuse such as paper, gloves, plastic containers, disposable overalls, overshoes etc, which have low traces of radioactive contamination. It is compacted into metal drums (200 litre drums). These drums are transported by road to Vaalputs, the National Radioactive Waste Disposal site in the Northern Cape for near surface disposal. Vaalputs is managed by Necsa on behalf of the State, in terms of a licence issued by the National Nuclear Regular. The level of radioactive in the metal drums decreases with time; after approximately 30 years, the level of radioactivity is equivalent to natural background levels. **Intermediate level waste** consists of radioactive resins and sludges, spent filter cartridges and scrap pieces from maintenance work. Intermediate-level waste is solidified by combining it into a sand/cement mix, which is poured into concrete containers, which are transported to Vaalputs for near surface disposal. The level of radioactive in the concrete containers decreases with time; after approximately 300-400 years, the level of radioactivity is equivalent to natural background levels.
Lianda Beyers Cronje Bantamsklip Anti-Nuclear Group (BANG)	▪ Disposal of radioactive waste? Where will it go? BANG claims that no plans is available for the disposal of high level waste at Koeberg, saying that there ”are over 1600 used nuclear fuel elements bathing in big pools to cool down north of Cape Town. This amounts to in excess of 6000t of highly radioactive waste since the first nuclear days of SA. Bantamsklip would be producing around two and a half times the amount of Koeberg.”	
Mr Louis De Wet Pearly Beach Cons. Society	Pollution and waste management ▪ The unsolved problem of high-risk nuclear waste management is a matter for serious concern. ▪ A sharp increase in general pollution can be expected because of the sudden population increase. It may well be to the extent that it will clash with, or disturb tourist interests. ▪ Local sewerage disposal and possible contamination of both surface and underground water sources is already problematic. This seems to be a national problem virtually out of control, which can only be the demise of fynbos eco-systems and tourism	
Mr and Mrs Michael/ Susanne Fuchs Klein Paradijs County House	▪ What happens to the waste heat of the plant? Will it be used in any way (e.g. provide heating for local residents in winter)?	
Mr Luke Hutchinson	▪ Impact of all other waste and nuclear waste.	
Mrs and Mr Helen / Lars Manson-Kullin	▪ Storage and transportation of hazardous waste – radioactive for 250 000 years! ▪ General pollution control – carbon is produced all through the production cycle.	
James (Jim) Michael Pattison	▪ The cost, threats and feasibility of <u>disposing of spent fuel</u>.	
Mr JJ Mutyorauta Northern Cape Environmental Management	▪ Transportation of radioactive raw material and nuclear waste.	

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Mrs Carmen Janet Perrott	▪ What are you planning to do with high and low levels of waste?	
Ingela Richardson	▪ Transportation issues – nuclear fuel will be traversing this country's treacherous highways to the sites, and transporting waste from them. There are numerous international accounts of accidents and contamination along the routes. How are these vehicles to be identified, how many towns do they go through, how often, have people in these towns been consulted/informed, what is the condition/accident rate on these roads? ▪ Waste storage – a fair amount will be stored (normally high level waste) onsite. What is the life expectancy of the power station? How much waste is expected to be produced during its life cycle, and what is the nature of that waste? What emissions are expected and how much of it? What are the wind patterns of the area? What monitoring will be done? Will this effect passing ships or sailors? ▪ Emissions into the air and water – surveillance and monitoring that is credible and transparent must be provided. What materials and chemicals will be worked with and what are the quantities of these materials, the hazards of these materials and the potential health effects of these materials? What pollution and emissions will be forthcoming into the air, water, or as solid waste and what radioactive and other substances these will contain and in what quantities and what are the health hazards of these. ▪ How would radioactive fuels and waste be transported back and forth? Where would waste be stored? (All levels). ▪ Eskom has stated on its website that areas once used by a nuclear reactor will be "revegetated". Overseas (including sites like Chernobyl and Sellafield) they have found that contamination has made this impossible. How does PBMR/Necsa plan to mitigate disaster effects to the environment? How much money has been set aside for decommissioning/decontaminating areas?	**Spent fuel** or h**igh-level radioactive waste:** The spent fuel is retained at Koeberg in spent fuel storage facilities (pools and casks) licensed by the National Nuclear Regulator. The pools and casks have sufficient capacity for the 40-year design life of Koeberg. The SA Cabinet approved a National Radioactive Management Policy and Strategy in 2005. The Department of Minerals and Energy (DME) is currently drafting legislation to implement the Policy. Two options for the long term management of spent fuel are possible: (a) direct final disposal of the spent fuel in a deep underground geological disposal facility, or (b) reprocessing of the spent fuel to extract unused uranium and plutonium for re-use and concentration and disposal of the residual (about 3-4% of the spent fuel) high level waste in a deep underground geological disposal facility. Both options are being pursued internationally. The radioactivity of some of the materials in high-level radioactive waste decreases back to natural levels within relatively short periods of time. Other materials however remain radioactive for several thousands of years. Hence the need to dispose of high-level radioactive waste in deep geological disposal facilities where it is isolated from the environment. For the proposed nuclear power station, Eskom intends to follow the same practices for the management of radioactive waste as discussed above, under the regulatory control of the National Nuclear Regulator and subject to the requirements of the National Radioactive Waste Management Policy and Strategy and any associated legislation or regulations.

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Mr Franz Rolinck Lesedi Community Trust	▪ The risks of nuclear power plants and waste disposal are too high for the population of South Africa – and the environment. ▪ Nuclear waste is toxic for more than 10 000 years. How can we do this to the planet and our children? ▪ Emphasis on waste disposal risk.	The maximum number of fuel elements that may be stored in the spent fuel pools at Koeberg is specified in the Nuclear Installation Licence issued by the NNR. For each spent fuel pool the maximum number is 1536 fuel assemblies, i.e a total of 3072 fuel elements for the station. As indicated in the Eskom Annual Report 2007, page 186, a total of 1561 spent fuel elements have been produced in the 23 years of operation up to the end of March 2007. At present the pools contain just less than 1000 tonnes of spent fuel, including the structural material in the fuel elements. The total amount of spent fuel is well within the licence conditions. At present the waste heat from Koeberg is taken away from the condensers to the sea. There are no plans to utilize this waste heat. This is likely also to be the case for the proposed power station. The procedure for transporting nuclear waste is in accordance with the International Atomic Energy Agency (IAEA) " Regulations for the Safe Transport of Radioactive Material" (ST-1 of 1996). The National Nuclear Regulator (NNR) applies these regulations in South Africa. This includes the approval of licensed containers or packages for raw material and nuclear fuel. The packages are subject to strict integrity requirements for impact, fire, immersion, penetration etc.
Mr A Roux Department of Agriculture Sustainable Resource Management	▪ The proposed establishment of the Eskom Nuclear Power Station may contribute to pollution especially in terms of waste management. This pollution may have an effect on the environment and the produce from agricultural land.	
Mr and Mrs Diana Catherine / Louis Richard Serrurier	▪ If nuclear? Transportation and storage of waste.	
Ms Melinda Swift Cradle of Humankind World Heritage Site	▪ Waste management strategy for spent fuel.	

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	▪	Eskom makes financial provision for the decommissioning of all its power stations. Since Koeberg began operating it has contributed on a monthly basis to the decommissioning provision This financial provision now stands in excess of R 2 billion. All new nuclear power stations will make such financial contributions. The financial provision is reflected in Eskom's Annual Financial Statements, and is independently audited. The provision will be used for decommissioning of the station as well as the management and final disposal of the spent fuel.
Ms Maya Aberman	The following constitute the comments of Earthlife Africa Cape Town to the Background Document for the Eskom Nuclear Power Station and Associated Infrastructure and the Comment Sheet 1: Scoping Phase. ▪ There is no responsible way to "dispose" of radioactive waste and it can remain dangerous for hundreds of thousands of years, equivalent to 10,000 generations. There is no plan in place for the long-term storage of, or any final disposal site for, radioactive waste anywhere in the world. Low-level nuclear waste storage sites are built in rural areas far way from densely populated areas. Is it fair to expose people to such risks simply because they live in rural areas that are generally not well represented and without political influence? Nuclear waste is a responsibility for hundreds of thousands of years and it will be future generations that will bear the much of the health, environmental and financial costs. The best solution would be not to produce any radioactive wastes in the first place; the next best is to stop producing more now. ▪	Thank you for these comments. All aspects of nuclear waste management from source at the power station to final disposal are the domain of the National Nuclear Regulator and therefore are not covered in the scope of this EIA. Radioactive waste is internationally categorised into three levels: **Using Koeberg as an example:** L**ow-level radioactive** waste consists of day-to-day refuse such as paper, gloves, plastic containers, disposable overalls, overshoes etc, which have low traces of radioactive contamination. It is compacted into metal drums (200 litre drums). These drums are transported by road to Vaalputs, the National Radioactive Waste Disposal site in the Northern Cape for near surface disposal. Vaalputs is managed by Necsa on behalf of the State, in terms of a licence issued by the National Nuclear Regular. The level of radioactive in the metal drums decreases with time; after approximately 30 years, the level of radioactivity is equivalent to natural background levels.

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Mike Kantey	▪ It also seems fairly obvious that the Nuclear Waste Policy issues MUST be resolved once and for all, since it is such a basic principle of Ecological Justice. We cannot accept a situation where an industrial process is approved WITHOUT a hazardous waste policy. It's the road to perdition! ▪ The mere fact that it is EXCLUDED from the EIA process provides grounds for suspicion.	
Mrs Samantha Sara Lindsay St. Francis College (School)	▪ Nuclear waste: storage/disposal – short and long term plans.	
Mrs Sharon Mare The Beach House	▪ What happens to nuclear waste?	
Mr Stuart Kent Mare	▪ Nuclear waste disposal.	
Mr Tyran Mare	▪ Nuclear waste disposal.	
Shila Nozipho Sisusa Tshepo Sisusa Gert Damas Peter Mthana Mr Mzimasi Oswald Qubu Stephanie Monique Sisusa Ms W Caroline Sisusa Miss Notsikelelo M Tebekana Mrs Sylvia Qubu Miss Katie Jansen The Beach House	▪ There is still no safe way to take care of nuclear waste, which will remain a danger to our community for a long time. ▪ My constitutional right is to live in a healthy environment.	
Mrs Sara Stevenson	▪ Waste disposal management.	

NAME & ORGANISATION	ISSUES/COMMENTS	RESPONSE
Mr Cornelius Janse Uys TVD Consulting Engineer	▪ Short-term effects of nuclear waste storage and cost. ▪ Middle term effects of nuclear waste storage and cost. ▪ Long-term effects of nuclear waste storage and cost. ▪ Historic effects of nuclear waste storage and cost. ▪ Why is nuclear power 3rd on the list of biggest polluters in the world = 2007 published list.	
Mrs Barter Celeste Barker	Adherence to international norms for: ▪ Waste management.	Thank you for these comments. All aspects of nuclear waste management from source at the power station to final disposal are the domain of the National Nuclear Regulator and therefore are not covered in the scope of this EIA. Radioactive waste is internationally categorised into three levels: **Using Koeberg as an example:** L**ow-level radioactive** waste consists of day-to-day refuse such as paper, gloves, plastic containers, disposable overalls, overshoes etc, which have low traces of radioactive contamination. It is compacted into metal drums (200 litre drums). These drums are transported by road to Vaalputs, the National Radioactive Waste Disposal site in the Northern Cape for near surface disposal. Vaalputs is managed by Necsa on behalf of the State, in terms of a licence issued by the National Nuclear Regular. The level of radioactive in the metal drums decreases with time; after approximately 30 years, the level of radioactivity is equivalent to natural background levels. **Intermediate level waste** consists of radioactive resins and sludges, spent filter cartridges and scrap pieces from maintenance work. Intermediate-level waste is solidified by combining it into a sand/cement mix, which is poured into concrete containers, which are transported to Vaalputs for near surface disposal. The level of
Victor & Kim Breach	▪ The spent fuel rods at present are stored on site at Koeburg. If a dump is planned elsewhere, it will mean these fuel rods as well as other toxic wastes will have to be transported through our major towns and villages. To say an accident will not happen would be stupid; look at the accidents that have happened at Koeberg with the turbines. Also the accidents that have occurred elsewhere in the world, nobody can expect human errors or short cuts not to creep in, especially when money and time pressures are involved. 'First world' America even falls foul of these problems, with their nuclear power.	
Mrs Daniela Casciani	▪ Nuclear Waste!!	
Mr and Mrs Noel & Jean Gedye	▪ What happens to the nuclear waste?	
Curt Martheze	▪ South Africa needs to take responsibility for itself and the great wealth the country has to offer, it's people, it's resources. ▪ I am particularly concerned with the west coast and it's implication on the natural environment: specifically the nature reserves and Grotto Bay area, which have a number of threatened species already. As it has already been established, with Koeberg having generated waste that is toxic and indestructible!	
Mr Roelof McDonald	▪ There is still no safe way to get rid of nuclear waste. This holds a threat to our community, which would last for years. ▪ It is my constitutional right to live in a safe healthy environment.	

NAME & ORGANISATION	ISSUES/COMMENTS	RESPONSE
Mr PM Mthana	▪ There is still no safe way to dispose of nuclear waste, which will hold dangers to our community for years to come. ▪ It is my constitutional right to live in a safe and healthy environment.	radioactive in the concrete containers decreases with time; after approximately 300-400 years, the level of radioactivity is equivalent to natural background levels.
Charles Tregoning	Nuclear Energy: ▪ This is not the most efficient way of generating electricity and no further nuclear facilities should be considered until the nuclear industry have come up with a environmentally acceptable manner in which to deal with their waste. At this point it is buried, and what about the highly radioactive waste being buried "in situ". This area remains off limits until the half-life of the isotope has elapsed? And how long is this? ▪ The song that it is clean energy is a fallacy. If we apply the cradle to grave concept then it would be almost on par with fossil fuels. This is without the enrichment process being taken into account. With climatic changes taking place tectonic plate movements with accompanying seismic activity the concept of burying might well be the wrong one.	**Spent fuel** or h**igh-level radioactive waste:** The spent fuel is retained at Koeberg in spent fuel storage facilities (pools and casks) licensed by the National Nuclear Regulator. The pools and casks have sufficient capacity for the 40-year design life of Koeberg. The SA Cabinet approved a National Radioactive Management Policy and Strategy in 2005. The Department of Minerals and Energy (DME) is currently drafting legislation to implement the Policy. Two options for the long term management of spent fuel are possible: (a) direct final disposal of the spent fuel in a deep underground geological disposal facility, or (b) reprocessing of the spent fuel to extract unused uranium and plutonium for re-use and concentration and disposal of the residual (about 3-4% of the spent fuel) high level waste in a deep underground geological disposal facility. Both options are being pursued internationally.
Prof Nancy Van Schaik Kogelberg Branch, Botanical Soc	▪ Estimation of nature and volume of radioactive waste (What nuclides with what ½ life and volume of each) ▪ Plans for short and long term storage of radioactive waste.	

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	▪	The radioactivity of some of the materials in high-level radioactive waste decreases back to natural levels within relatively short periods of time. Other materials however remain radioactive for several thousands of years. Hence the need to dispose of high-level radioactive waste in deep geological disposal facilities where it is isolated from the environment. For the proposed nuclear power station, Eskom intends to follow the same practices for the management of radioactive waste as discussed above, under the regulatory control of the National Nuclear Regulator and subject to the requirements of the National Radioactive Waste Management Policy and Strategy and any associated legislation or regulations.
Mr Pieter Sneewe National Union of Mineworkers	Radiation Waste (Potential Impacts).	All aspects of nuclear waste management from source at the power station to final disposal are the domain of the National Nuclear Regulator and therefore are not covered in the scope of this EIA.
Ms Annelise le Roux Succulent Karoo Information Centre	What happens to the radioactive water in which the high-grade waste is stored?	The water is continually passed through filters and cleaned. The filters remove all radioactivity from the water. When the filters reach the end of their life they are treated encapsulated an disposed of as intermediate waste.