

Pelindaba Public Safety Information Forum Minutes of Meeting

Date: 24 March 2011

Time: 18:00

Venue: Necsa Visitor Centre

NO	DESCRIPTION	RESPONSIBLE PERSON
1	<p>PRESENT</p> <p>J van Vuuren (Chair) P Carvalho (Deputy Chair) W Beukes (Secretary)</p> <p><u>Community Members:</u></p> <p>A Barnard N Barnard S Brent S Engelbrecht W Engelbrecht I Fourie R Fourie B Garbett (PWG) C Garbett (PWG) J Heinrich R Jansen H Joubert T Madibogo S Lafont J Lombaard M Ruyter R Schütte R van der Dool C van der Merwe S van der Merwe S Vermaak H Vreugdenburg</p> <p><u>Madibeng:</u></p> <p>T Tshabalale</p> <p><u>NNR:</u></p> <p>G Moonsamy K Mzebensi M Sello</p> <p><u>Necsa:</u></p> <p>R Adam W K Baloyi S Chetty Sukhdeo S Dlozi E du Rand D Fourie C Janneker L Kirsten F Langa G Lekwe R Masango P Mthombeni E Mulane U Natha R Peters K Ratabane A Rennie-Kroon I Steyn A C van der Bijl E van Heerden J vR van Oudtshoorn A Visagie</p> <p>Apologies</p> <p>D Gilbert (PWG) J Taylor (PWG) A Carolissen vZ de Villiers M Moeletsi T Phahlamohlaka P Terblanche T Coetzer (Tshwane)</p>	<p>Kabelo Ratabane & Lorraine Kirsten</p>
2	<p>WELCOME</p> <p>John van Vuuren welcomed members of the community and other stakeholders at the meeting and encouraged them to take part in the discussions.</p> <p>He informed the attendees that according to the Act, both his and Pedro's term as Officials of the Pelindaba PSIF had expired on 28 February and that the NNR must appoint a new Chair and Deputy for 2011/2012 term. As the new term will only start on 1 April 2011, they had been asked to stand in for this meeting.</p> <p>In the light of the interest in the current Japan disaster, it had been put first on the agenda. From the community perspective the question is the emergency preparedness of Necsa. Also key are the other disaster management role players, the Madibeng Municipality and the NNR. John said, without prejudice, that the Madibeng Municipality was conspicuous by their absence. Their lack of commitment was also displayed earlier when they were also absent from a scheduled meeting. (Also see §6.1 below.)</p> <p>The remainder of the agenda follows with the normal points.</p>	<p>John van Vuuren</p>

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3	<p>MINUTES OF THE PREVIOUS MEETING</p> <p>John noted on the comprehensiveness of the minutes of the previous meeting, saying it reflected everything that was said.</p> <p>The motion to approve the minutes was made by Pedro Carvalho and seconded by Robert Peters.</p>	<p>John van Vuuren</p> <p>Bampie Beukes</p>
4	<p>MATTERS ARISING</p> <p>\$ 4 - \$ 11 Permissions process Dr Rob Adam said the matter had been delegated to the relevant Manager, who will still report back on it and other issues such as the bicycle races.</p> <p>\$ 5.1 E - Public dose & records With reference to the special tour Necsa can arrange for the Pelindaba Working Group [PWG] to get a better understanding of the radiological monitoring and calculation systems, Bob Garbett indicated, on behalf of PWG, that they would take advantage of the opportunity. He should contact Isabel Steyn in this regard.</p> <p>\$ 5.4 B - Telephone numbers List for Emergencies Necsa had started to update their list of all neighbours within the 5km radius at the end of 2010. The list is now updated, and contact will be made to verify the details.</p> <p>\$ 8.7 - The new sub-station Rob indicated that discussions between Necsa and Eskom had been held, but more need to take place.</p> <p>\$ 9 - Chairman's report A comprehensive chairman's report will be made available before the next meeting.</p>	<p>Rob Adam</p> <p>Bob Garbett</p> <p>Isabel Steyn</p> <p>Rob Adam</p> <p>John van Vuuren</p>
5	<p>OVERVIEW OF THE JAPANESE DISASTER</p> <p>Robert, in presenting the sequence of events of the eleventh of March 2011 disaster in Japan, asked the question whether it was a humanitarian catastrophe or a nuclear disaster. It was agreed by all that it was both. He also discussed how similar events were mitigated for at the Koeberg nuclear power station. A response to an article in which allegations of dangerous aquifers below the Necsa site was made was also presented. The presentation is available on the Necsa website.</p> <p>Some questions were asked and statements discussed during the presentation:</p>	<p>Robert Peters</p>
5.1	<p>How did the radioactive material get into the steam? (How was the hydrogen formed?)</p> <p>This was explained during the presentation: Due to the residual decay heat, which could not be efficiently transported away, the temperature increased. At high temperatures the metal sheath (cladding) of the fuel rod started reacting with the water resulting in a metal oxide layer and hydrogen being formed. At even higher temperatures, the thinned metal sheath ruptured under the increased internal pressure of the fuel rod, releasing gaseous fission products, which then became a part of the steam / hydrogen gas mixture.</p>	<p>Bob Garbett</p> <p>Robert Peters</p>
5.2	<p>One cannot compare tsunami / earthquake deaths with nuclear related deaths as the latter will happen much later.</p> <p>All agreed that the workers at the Fukushima plant (and to a much lesser extent the local population) had an increased risk of cancer due to their exposure. However the statistics of the National Police Agency of Japan are as accurate as can be, stating that on 21 March the number of confirmed deaths were 8 805 and the number of missing people were 12 653. None of these can be attributed to the nuclear disaster at Fukushima. The plea by Robert was to see things in perspective.</p>	<p>Christine Garbett</p> <p>Robert Peters</p>

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5.2 A	<p>In general, nuclear related death statistics are suspect as they are industry driven.</p> <p>One cannot determine the long term effects on those exposed to the radiation in Japan. All one can say is that these are the current statistics.</p>	<p>Christine Garbett Gino Moonsamy</p>
5.3	<p>My borehole has not been tested in a long time.</p> <p>Hannes was requested to furnish his contact information to Isabel Steyn to enable Necsa to arrange for a specific time to withdraw a sample from his borehole. The analysis of water samples is a service Necsa is providing to the local residents.</p>	<p>Hannes Vreugdenburg Isabel Steyn</p>
5.4	<p>Is Necsa burying radioactive waste in boreholes on site?</p> <p>No: Necsa is storing radioactive waste in 17 metre long sealed pipes. The pipe store has boreholes around it that go much deeper and these are monitored so any possible leakage will be detected.</p> <p>Acid Mine-drainage is a threat to all of us. It must be a danger if it seeps through to the pipe store?</p> <p>We are indeed all upset about the acid mine drainage on the East and West Rand. Fortunately it is not yet near our community. Regarding the pipe store, it isn't in a dolomite area; there is a lot of slate making it very difficult for water to pass through to there.</p>	<p>Christine Garbett Robert Peters</p> <p>Christine Garbett Robert Peters</p>
5.5	<p>Who did the geological survey of Pelindaba, and when was this done?</p> <p>Marco Andreoli, in the early 1960's, before the SAFARI-1 reactor was built.</p>	<p>Christine Garbett Rob Adam</p>
5.6	<p>It is a pity Dominique Gilbert is not here. I want to suggest that it is a little unfair to discuss Dominique Gilbert's article without her being present.</p> <p>It is indeed a pity that she is not here, she had indicated she would come but we have received her apologies. It was published without Necsa having been given a chance to respond. "I understand where you are coming from." The article is however in the public domain, and as such it is good for the community to hear Necsa's response. I am sure Necsa is willing to discuss the matter with Dominique, be it 'in private' or in this forum.</p> <p>There are other negative articles by, amongst others, some nuclear experts. Why is Necsa only concentrating on Dominique's article?</p> <p>For the community, the safety and commercial viability of this area is of concern, so we are interested about matters relating to SAFARI-1 and not Koeberg. That is why it is heartening to know that regular emergency exercises for worst case scenarios, like a plane crashing into SAFARI-1, are being held under the scrutiny of the NNR and PSIF stakeholders.</p>	<p>Bob Garbett Robert Peters Danie Fourie John van Vuuren Robert Peters</p> <p>Bob Garbett John van Vuuren</p>
5.7	<p>Why are we discussing Koeberg when we are living at Pelindaba?</p> <p>John agreed, repeating we should concentrate on local issues like his borehole water.</p> <p>Christine said she would like to know about Koeberg as they held their holidays down in Cape Town.</p> <p>Chantal pointed out that the reason Koeberg was included on the agenda was that Necsa had received many enquires about Koeberg and as such Necsa would like to communicate this information.</p>	<p>H Vreugdenburg John van Vuuren Christine Garbett Chantal Janneker</p>

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5.8	<p>How safe is SAFARI-1?</p> <p>-In terms of core design: The core of a reactor is that part that contains the fuel and controlling absorber rods inside its vessel. In the case of SAFARI-1 a control rod is divided into 3 sections of equal length, a fuel assembly length equalling a section length. The top part of a control rod contains neutron absorber material (like cadmium), the central section is fuel and the bottom is structural (to allow for coolant flow). Under normal static conditions, the control rods rest on the bottom plate of the reactor, which means the top part of the control rod is fully inserted in the core. For SAFARI-1 to go critical (have a steady chain-reaction) it needs the fuel of the 6 control rods to be in the core. This means if one were to drop out only the fuel part of the control rods, the reactor would stop. However as the fuel part is removed it is replaced by the absorber section, which also, on its own, would have been able to stop the reactor. So the reactor is stopped "doubly". There is a model in the centre that demonstrates this.</p> <p>-In terms of size: The SAFARI-1 reactor vessel is about as big as a 40 gallon drum. SAFARI-1 operates at 1 bar (atmospheric pressure) and is situated in a very big pool of water. Koeberg's reactor pressure vessel has an approximate diameter of 4 m and an approximate height of 9 m. The Fukushima plants 2-4 roughly have a diameter of 6 m x 20 m high. Koeberg operates at 155 bar and around 315°C; whereas the Fukushima plants operate at 70 bar and around 280°C. In terms of heat generated in the reactors: SAFARI-1 generates 20 MW whereas one Koeberg unit generates up to 2 800 MW. {Note: Fukushima 2-4 generates about 2 300 MW each.}</p> <p>-In terms of it being Research Reactor: There is no history of research reactors having a significant incident, despite there being about the same number research reactors as power reactors in the world. In the USA alone there are about 100 of these two 'types'. Many have been built in non-industrialized countries. In Africa there are also research reactors in Algeria, Egypt, Ghana and Nigeria.</p>	<p>John van Vuuren</p> <p>Robert Peters</p> <p>Arie van der Bijl</p> <p>Robert Peters</p> <p>Rob Adam</p>
5.9	<p>Thinking SAFARI-1 vs. Koeberg and ignoring reactor type: In the case of a disaster, are the possible radioactive emissions in proportion to their size, or fuel content or other things?</p> <p>Robert did not want to compare the fission product / radioactive releases between them due to the different fuel forms. The Koeberg fuel consists of a thin tube around a fairly thick uranium-oxide pellet. The SAFARI-1 fuel consists of a very thin uranium plate with a thin aluminium plate around it, therefore dissipating its heat very much quicker and therefore problems with the fuel is much more unlikely to occur.</p>	<p>Christine Garbett</p> <p>Robert Peters</p>
5.10	<p>What is the biggest circle that will be affected if the worst were to happen with SAFARI-1?</p> <p>The NNR requested Necsa to again update its dispersion model for the 5 km emergency planning zone. For the worst case scenario, including 100% of the inventory (total content) of nuclear material (all the uranium and all fission products) being released and dispersed, the public dose limit of 1 mSv/annum would be attained after a 2 km radius. Abrie suggested that a presentation and discussion on the dispersion model be made to the PSIF as it is quite a technical subject.</p> <p>Is all fuel (including stored radioactive material) and hazardous materials (e.g. fluorine) included in these calculations?</p> <p>No, the dispersion model purely looks at the reactor. The other materials are considered in Beyond Design Base events where one looks at what is credible for the very low probability events. It is very technical but this can also be discussed at a future meeting. We also need to consider terrorist activities. Because something like that hasn't happened in the past does not mean it cannot happen in the future. With the meetings agreement the whole emergency planning, modelling and Beyond Design Base events, will be placed on the agenda for the next meeting.</p>	<p>H Vreugdenburg</p> <p>Abrie Visagie</p> <p>Christine Garbett</p> <p>Abrie Visagie</p> <p>Christine Garbett</p> <p>John van Vuuren Bampie Beukes</p>

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5.11	<p>Is the effect of wind taken into account?</p> <p>Yes. We need to be conservative so the worst case scenario meteorological conditions are used in the dispersion modelling.</p> <p>To illustrate a worst case scenario, Robert described how the maximum wave height for Koeberg is calculated: To the estimated worst tsunami wave (4 m high), the maximum spring tide is added, as well as the maximum storm wave height.</p>	<p>H Vreugdenburg</p> <p>Abrie Visagie</p> <p>Robert Peters</p>
6 6.1	<p>MADIBENG MUNICIPALITY</p> <p>Emergency Exercise Feedback</p> <p>There was no representative present from the Madibeng Municipality, which indicated a lack of commitment by the relevant senior management. The chairman proposed that the matter be taken up with the relevant higher authorities.</p> <p>Necsa would follow up on this.</p>	<p>-</p> <p>John van Vuuren</p> <p>Isabel Steyn</p>
7	<p>NNR HIGHLIGHTS</p> <p>Gino indicated that the NNR did not have any presentations.</p>	<p>Gino Moonsamy</p>
7.1	<p>On emergency planning, he reminded everybody that the NNR sketched a different emergency situation every 18 months which tested Necsa, Necsa's subsidiaries, Madibeng and other disaster management agencies. Regarding the last exercise, Necsa was closing out the last finding against it, but there are some outstanding issues from Madibeng.</p>	<p>Gino Moonsamy</p>
7.2	<p>Regarding the Japanese disaster, like 9/11, it will cause, worldwide, a whole new way of looking at nuclear safety. The disaster is by no means trivial and can't be brushed aside. It will be used as a learning exercise, in whatever way it is applicable to South Africa.</p>	<p>Gino Moonsamy</p>
7.3	<p>As a community member, are you satisfied with Necsa's preparedness?</p> <p>Yes. Given that the results from the emergency exercise and Necsa's close out of the NNR findings speak for themselves.</p>	<p>John van Vuuren</p> <p>Gino Moonsamy</p>
7.4	<p>This is a question asked by me for about the last 4 years and I still have not got a reply. It is about the herring of insurance: Essentially, if there were to be an accident here, there is no cover for any of the landowners. So if we had to evacuate because of widespread contamination, there is no meaningful insurance in place. (1:14:40)</p> <p>But is that not covered by the act?</p> <p>Yes it is, but can you imagine the government having to come and mop up a Necsa or Koeberg problem? The government, frankly, if there were to be an accident, just doesn't have the money to compensate the landowners. And if they had the money, it would take a decade or more before you get paid out, with you having to prove how much your property was worth, etc.</p> <p>Is your point: You did not get an answer from the NNR or that there isn't enough money to be paid out?</p> <p>Gino will bear me out: we have been waiting for 3 years. It is an NNR problem. It is important for the people that we effectively do not have insurance cover, and that we are actually subsidizing the nuclear industry, in Cape Town and at Pelindaba, by taking the risk and not the nuclear industry.</p>	<p>Christine Garbett</p> <p>John van Vuuren</p> <p>Christine Garbett</p> <p>John van Vuuren</p> <p>Christine Garbett</p>

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7.4	<p>Insurance (Continued)</p> <p>Is this a PSIF issue?</p> <p>Yes, this is a very much a PSIF issue.</p> <p>What answer would satisfy you that the government has “a billion rand” set aside for such an incident?</p> <p>Well, government won't. The problem is with liability: There is liability insurance, but it does not cover much. So I think the nuclear industry must pay a premium for the market value of every property within at least a 5 km radius at Pelindaba and a 15 km (or whatever) radius at Koeberg. Otherwise we are carrying the industry and that is not right.</p> <p>Pedro suggested Christine put in writing her exact requirements for it to be tabled at the forum and that the relevant people speak on it. The thing is, it has to be balanced against a probability, because you can't cover an insurable incident that there is no risk for.</p> <p>Chantal stated that this particular question has been stated to this forum and Necsa on several occasions and that Necsa had replied on several occasions. Necsa could table those documents, to demonstrate that this was so.</p> <p>The Necsa response is that there is the insurance policy, and when the insurance runs out there is government. What I say is that our government can't take up these sort of issues and that the public can not afford to self insurance against nuclear disasters.</p> <p>We can escalate this to the DoE. Clearly Necsa has responded. If you are however not happy with the response, it should be escalated to a different level.</p> <p>It is therefore agreed that this should be addressed at a higher level. The minister was supposed to be here this evening, so it would have been a great occasion for this.</p> <p>A closing remark: If the probability is so low, then insurance underwriters would surely welcome premiums to cover you against nuclear. I have mentioned it in this forum before, we have tried to get cover, but none is available. So the underwriters way up the probabilities and on that basis they decide whether they are going to provide cover or not. Nuclear disasters are excluded from every policy, irrespective of what it is taken out for.</p> <p>It was agreed that this matter has to reach closure. It will be on the agenda for the next meeting. The presenter must have the necessary knowledge and authority to discuss it.</p>	<p>John van Vuuren</p> <p>Christine Garbett</p> <p>John van Vuuren</p> <p>Christine Garbett</p> <p>Pedro Carvalho</p> <p>Chantal Janneker</p> <p>Christine Garbett</p> <p>Gino Moonsamy</p> <p>John van Vuuren</p> <p>Bob Garbett</p> <p>John van Vuuren</p>
7.5	<p>Lastly, the NNR would like to make an announcement regarding the Chairperson and Deputy Chairperson of the Pelindaba PSIF at the close of the meeting.</p>	Gino Moonsamy
8	<p>Necsa</p> <p>8.1 Necsa Highlights</p> <p>Rob made a short presentation of the highlights at Necsa since the last meeting. The presentation is available on the Necsa website.</p>	Rob Adam
8.1	<p>Will Necsa or a contractor transport the waste from Pelindaba to Vaalputs?</p> <p>A Necsa has a subsidiary called NTP Logistics that will be involved and the transport probably will be done internally as much as Necsa can.</p>	<p>John van Vuuren</p> <p>Rob Adam</p>
8.2	<p>November 2009 Emergency Exercise Findings - Feedback</p> <p>Dr Ramatsemela Masango said that there was only one outstanding finding from the previous emergency drill, which will be completed by 31 March 2011. The presentation is available on the Necsa website.</p> <p>It was agreed that the topic can be removed from the agenda.</p>	Ramatsemela Masango

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8.3	<p>Necsa Community Services Feedback</p> <p>As in the past, the yearly statistics of the call outs and support services rendered by Necsa to the public were shown and compared with the previous year. The presentation is available on the Necsa website. Unreserved thanks from the community.</p>	<p>Ramatsemela Masango</p> <p>Bob Garbett</p>
8.4	<p>PBMR Footprint</p> <p>It has been decided to decommission the PBMR Fuel Development Laboratories. Money will be transferred from PBMR ("owner") to Necsa (operator) to do the work. The current emissions are nil as no work is being done anymore. The NNR requirements in terms of maintaining the buildings are being done. Once the money has been received the decommissioning will start. The single slide presentation is available on the Necsa website.</p>	<p>Rob Adam</p>
8.4 A	<p>Roughly what will the decommissioning cost?</p> <p>Treasury has allocated an amount of about 50 million Rand to PBMR for this.</p>	<p>Christine Garbett</p> <p>Rob Adam</p>
9 9.1	<p>RESPONSE TO MATTERS RAISED</p> <p>Environmental Impact of Quad Bikes</p> <p>A meeting was held with the tenant, and all quad bike activities on the western side of Pelindaba were stopped. Subsequently Necsa received a complaint and the tenant was warned that his contract could be cancelled. It has also been established that some of the tenants in the Necsa houses have quad bikes, so we are not sure who the perpetrator of the last incident was. Necsa is monitoring the situation. Monthly meetings are now taking place.</p>	<p>Ramatsemela Masango</p>
9.1 A	<p>Who was complaining about the quad bikes?</p> <p>Necsa received a formal complaint.</p> <p>That complaint was brought by Lesley Wiening, who lives on the edge of the river and that sound obviously permeates into her house.</p>	<p>H Vreugdenburg</p> <p>Isabel Steyn</p> <p>Pedro Carvalho</p>
9.1 B	<p>Pompoms</p> <p>I would like to raise the issue of the absolute invasion by Pompoms of the Necsa site. It is probably the most invasive plant species in our area, even taking over grazing land. Necsa is almost at the point, from what I can see visually, that it is going to take decades to eradicate it.</p> <p>How does one deal with it?</p> <p>One can pay the Renoster Spruit Conservancy a fee and they will do it for you.</p> <p>One must get rid of it and unfortunately it is a chemical process: you have to spray. We live next to the Necsa property and the other similar environmental issue is the Kariba Weed in the dam. It doubles its biomass in 4 to 6 days, so if you don't get rid of it within say a week, it will take over the dam.</p> <p>We are spraying it, in co-ordination with the community around Necsa to try and ensure that we spray at the same time. We are working according to a programme.</p> <p>What spray does one use?</p> <p>Bob volunteered to forward the relevant information to John van Vuuren, who would send it on to John Heinrich.</p>	<p>Christine Garbett</p> <p>Rob Adam</p> <p>Christine Garbett</p> <p>John van Vuuren</p> <p>Isabel Steyn</p> <p>John Heinrich</p> <p>Bob Garbett John van Vuuren</p>

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9.2	<p>Environmental Monitoring Report</p> <p>Ramatsemela presented the statistics for the past three years on different doses and of uranium content in drinking water. The presentation is available on the Necsa website.</p>	Ramatsemela Masango
9.2 A	<p>Where does Necsa sample the Drinking Water?</p> <p>At the Schoemansville police station and the Cosmos community centre.</p>	John van Vuuren Isabel Steyn
9.2 B	<p>What Type of Uranium is measured?</p> <p>Natural uranium.</p>	Christine Garbett Rob Adam
9.3	<p>Calibration Pads</p> <p>Necsa is in the process of relocating the pads onto the Necsa perimeters. A licence was granted by the NNR, and a contractor has been appointed to do the relocation.</p>	Ramatsemela Masango
10	<p>NNR STATEMENT: Appointment of the Office Bearers</p> <p>Mr Mzebensi, the Chief Technical Officer of the NNR, announced the re-appointment by the NNR Board of John van Vuuren as the Chairperson and Pedro Carvalho as Deputy Chair of the Pelindaba PSIF, effective 01 April 2011 to 31 March 2012. He congratulated them on behalf of the NNR.</p>	K Mzebensi
11 11.1	<p>OTHER ISSUES</p> <p>Theft from a Necsa House.</p> <p>Adam said he lived in the Melvic Plots and shared a boundary with Necsa. He mentioned that he could hear at night how people were "carrying away" a Necsa house that was not too far from his house. He had also not seen Necsa Security check up on that area in at least a year's time.</p> <p>Thank you for the information, it is the first we hear of it. We will follow-up on the information.</p>	Adam Barnard Ramatsemela Masango
11.2	<p>If someone wants to have an agenda point added for the next meeting, please contact either Bampie or Esthel.</p>	John van Vuuren
11.3	<p>We appreciate the SMS reminders.</p> <p>All agreed.</p>	John Heinrich
11.4	<p>Day and Time of the PSIF Meetings.</p> <p>After a discussion it was decided to alternate the meetings between Thursday evenings (18:00) and Saturday mornings (09:00).</p>	All
11.5	<p>People who do not have transport to attend a PSIF meeting: how are they catered for?</p> <p>Necsa has extended the invitation, including transport, to various local communities.</p> <p>A PSIF planning meeting with Necsa had taken place. Necsa had undertaken to have separate discussions with the leaders in Attridgeville to establish a discussion forum as a way of including them in future.</p>	Christine Garbett Chantal Janneker John van Vuuren
11.6	<p>What is the Cumulative Effect of Radiation in this area?</p> <p>The item is to be placed on the agenda for the next meeting.</p>	Christine Garbett John van Vuuren

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11.7	Isabel requested to be contacted by PWG so that they could discuss what PWG wants to talk about. They agreed they would do this.	Isabel Steyn Bob Garbett
12	CLOSURE Meeting adjourned: 20:10 Next Meeting: 04 June 2011 at 09:00 Venue: Necsa Visitor Centre, Gate 1, Pelindaba	