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REPORTER:	*Julian O'Halloran*
PRODUCER:	*Gregor Stewart*
EDITOR:	*David Ross*

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THE ATTACHED TRANSCRIPT WAS TYPED FROM A RECORDING AND NOT COPIED FROM AN ORIGINAL SCRIPT. BECAUSE OF THE RISK OF MISHEARING AND THE DIFFICULTY IN SOME CASES OF IDENTIFYING INDIVIDUAL SPEAKERS, THE BBC CANNOT VOUCH FOR ITS COMPLETE ACCURACY.

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ACTUALITY AT SELLAFIELD

WORKER: This is the most highly active waste that we deal with on the Sellafield site and we have a rather large stockpile of highly active waste which we are now getting rid of.

O'HALLORAN: Nuclear waste that's so hazardous, for so long, that it will have to be stored for thousands of years, perhaps in huge vaults deep below the surface of the earth. For now the waste is in a variety of pits, ponds, silos, tanks and stores. Some are in such bad condition that the bill for clean-up will run to tens of billions of pounds. In charge is the new Nuclear Decommissioning Authority. But it's already running into problems, not least at Sellafield in Cumbria and Dounreay on the North coast of Scotland. As a debate begins about whether we need a new generation of nuclear power plants, File on 4 lifts the lid on Britain's nuclear dustbins.

SIGNATURE TUNE

ACTUALITY AT DOUNREAY PLANT

O'HALLORAN: We're standing on the seaward side of the Dounreay nuclear site. On our right is the big dome, the iconic feature of Dounreay, the 50 year old fast reactor. To the left the waves and rocks below us but right here in front is an area surrounded by green corrugated iron shuttering and down below, about 10, 12 feet down below us is a kind of red platform.
What is the significance of what we're looking at here?

JONES: Well this is the famous Dounreay shaft where intermediate level waste was disposed between 1958 and 1977…

O'HALLORAN: Warren Jones, a Dounreay project manager trying to make safe a shaft into which highly radioactive material was thrown for about twenty years. From it a plume of radioactivity has spread up to 300 metres in the rock. Before trying to get the nuclear waste out of the shaft, Warren Jones and his team are trying to seal it off from the surrounding area.

JONES: Basically it's a shaft that goes to a depth of about 65 metres below ground, running off the base of that is a horizontal tunnel and the main tunnel goes up to sea approximately 600 metres and that was the original effluent discharge pipeline for the entire site.

O'HALLORAN: In comparison with the enormous challenges that face you on this site in terms of cleaner disposal decommissioning how big is this shaft here?

JONES: Its one of the largest on site, certainly the waste retrieval aspects of the shaftway make it tricky.

O'HALLORAN: Dounreay run by the UK Atomic Energy Authority was for decades the site of the fast breeder reactor programme which was ultimately cancelled. It was also a centre for reprocessing spent nuclear fuel. But production stopped last year. It's now a legacy site, and all efforts are devoted to clean-up. Warren Jones has his work cut for many years to come just on this one waste shaft.

JONES: It's going to take us about 4 years just to put in the hydraulic isolations system around the shaft. The actual shaft waste retrieval programme will probably take between 5 and 10 years to complete. The approximate cost of the shaft waste retrieval operations is about £120 million and for the shaft isolation about £20 million.

O'HALLORAN: So really we're talking about millions and millions of pounds being spent dealing with this one problem year after year for 10, 15, 20 years into the future, is that roughly right?

JONES: Yes.

O'HALLORAN: But it's important because what's in here is dangerous?

JONES: It certainly doesn't meet modern nuclear safety standards for a disposable facility, no. Between 1971 and 1977 really large waste items were continued to be disposed to the shaft and then about May 1977 the shaft was no longer used.

O'HALLORAN: The shaft fell out of use quite suddenly, a decision forced on management by something they hadn't planned for. The event is recalled by a former health physics surveyor who worked at Dounreay for nearly 30 years. Herbie Lyall says the shaft had nuclear material, chemicals and other junk, poured into it year after year. How long did this go on for, with this waste being put down there?

LYALL: It been going on the whole time until such time as the shaft blew up.

O'HALLORAN: The shaft blew up?

LYALL: Yes I was on duty that night, it was on the 10th May 1977. The shaft top was blown off. It was a heavy shielded concrete block and it was something like 10 feet square, something like that, and it was blown off and thrown against the perimeter fence and the control room was wrecked. My own opinion is the shaft should never have been used in the first place.

O'HALLORAN: How do you characterise the way nuclear waste was dealt with in your time at the plant?

LYALL: There's only one answer to that, a complete shambles and a damn disgrace. We've left a terrible legacy for the people that's coming after us here and it did not need to happen because it was just a matter of organisation. They never had nothing organised as far as the waste was concerned.

O'HALLORAN: Herbie Lyall has not been alone in his criticisms of what went on at Dounreay. In 1997 a Nuclear Installations Inspector wrote a long memorandum, castigating safety and waste procedures. It was later published. And more recently a senior manager at Dounreay is quoted, as describing some methods used on the site in years gone by, as "reckless if not culpable". But the current Dounreay director Norman Harrison is reluctant to criticise past practices at the plant.

HARRISON: The Dounreay site operated to the standards of the time and applied the regulations which were enforced at any given historical period.

O'HALLORAN: But isn't it right that if more care had been taken in the past you'd have a much easier and cheaper task of decommissioning and making good this site in the future?

HARRISON: There's judgement here being applied against the standards of the 1950s when the idea of decommissioning was so far away and what one would have to do to do a full restoration of the site, that wasn't in people's minds.

O'HALLORAN: Are you saying it was neither wreckless nor culpable of people in the past to dump all that seriously radioactive waste down that shaft that I have seen out there?

HARRISON: Correct, it was neither reckless nor culpable, it was…

O'HALLORAN: Was it sensible?

HARRISON: At the standards of the time it was the agreed procedure, agreed with the correct regulatory authorities, so it was done under the appropriate licensed conditions.

O'HALLORAN: According to the Nuclear Installations Inspectorate, practices here were still seriously flawed as late as 1997?

HARRISON: I think there were shortfalls highlighted and acted upon.

O'HALLORAN: Shortfalls is a very kind word, they were very serious deficiencies werent they?

HARRISON: There were deficiencies found agreed and improvement programs agreed and now implemented.

O'HALLORAN: The cost of cleaning up Dounreay is estimated at up to £4 billion. And it will take between 30 and 50 years. Parts of the site could be off limits to the public for 300 years. But in recent times it's emerged that the clean-up question is not confined to the site itself, because radioactive material has reached nearby stretches of coast including a beach within a mile or two of the plant.

ACTUALITY AT SANDSIDE BEACH

O'HALLORAN: This is Sandside Beach a golden semicircle of sand but to get down to the shoreline here I have to pass an ominous warning sign that says that radioactive particles are being found here. It advises people not to dig in the sand or to let children or animals onto the beach. It turns out the particles are actually fragments of nuclear fuel and that hundreds of thousands of them were released near here in the past.

MINTER: When we moved into Sandside House, which was in 1991, there was at that time nothing, no evidence at all of any contamination of the environment.

O'HALLORAN: When Geoffrey Minter bought his house overlooking Sandside beach 14 years ago, he says it was like a dream come true. With the house came an estate with farmland, a golf course, and fishing. It also included Sandside Beach.
At the time it seemed a rock solid investment. But in 1997 the dream began to fade when a single radioactive particle was found on his beach. Geoffrey Minter says the UK Atomic Energy Authority, which operates Dounreay, told him it was a one-off, freak event. He felt reassured. But later that year while abroad he got more bad news.

MINTER: I got a call from my secretary to say that an emergency exclusion zone had been imposed on the estate. And I said "an emergency exclusion zone. What on earth has happened?" And it turned out that the government had decided that in light of the particles that were being found on Dounreay's foreshore primarily at that time, that they had got to set a 2 km food exclusion zone, that meant not taking fish. Within a couple of days the second particle in 1997 had been found at Sandside. By then I knew we weren't dealing with fluke rogue particles. In 1998 both the Chairman of the UKAEA and the chief executive of the UKAEA, on separate visits to Sandside House told my wife and I that there would be no more particles at Sandside.

O'HALLORAN: Again Geoffrey Minter accepted the assurance. But in the years since then another 53 radioactive particles have been found on Sandside beach and hundreds have turned up on the foreshore of the Dounreay plant. Hundreds more have been located on the seabed. This year one has even been found on a beach 14 miles away. As with all radioactive material there is a risk of causing cancer, especially if a particle is eaten or inhaled. Children are more susceptible. The Dounreay management now says hundreds of thousands of the particles were accidentally released into the sea through a discharge pipe long ago. The UKAEA now carry out regular monitoring of Sandside beach to search for particles. But Geoffrey Minter says that's not good enough.

MINTER: We ultimately had to take Atomic Energy Authority to court, we won our case with the judge stating that this was a peculiarly unpleasant form of contamination which caused damage not only when the particles arrived but continued when they were not removed from our land.

O'HALLORAN: Is it money you are after in long run?

MINTER: We need to be compensated yes, it would be stupid not to do that, but I have always fought for the aspect but they should also do the job in protecting the public and monitoring shouldn't be done when you've got a problem. A problem like this, you should actually be getting rid of the particles and what we have wanted to be done is for it to be cleared. But of course we do suspect they will continue to arrive and so does the authority. I think it's admitted by them that they can't stop them. So it's ruined the estate it's finished, it's no longer intact. We bought a lovely estate. It now has radioactive contamination. Have you ever seen an estate advertised for sale with radioactive contamination?

O'HALLORAN: Dounreay management would not comment on Geoffrey Minter's allegation that after the first two particles were found on his beach he was given firm assurances by UKAEA chiefs that it could never happen again. Clean-up of Dounreay is now the responsibility of a powerful new national body, the Nuclear Decommissioning Authority, which started work in April. It owns much of the nuclear industry. Although the current Dounreay decommissioning bill is up to £4 billion the question arises whether it could go higher as a result of legal claims and pressure to clean up the sea and beaches. The Chairman of the new authority, Sir Anthony Cleaver, is prepared to look at the options.
The land owner who owns Sandside Beach next to Dounreay believes that his beach shouldn't just be monitored for these radioactive particles, he said they should be cleaned up, taken away, is that conceivable, feasible or possible, that kind of operation?

CLEAVER: I think it would be possible to take away all the particles that are there at any given point in time but I don't know what the likelihood is of another particle appearing there, that would be the question.

O'HALLORAN: And the cost of getting all the hundreds of thousands of particles that are understood to be in the sea away, that would presumably be astronomic?

CLEAVER: I simply don't know, that's something I know that the authority need to look at and are continuing to do.

O'HALLORAN: The Nuclear Decommissioning Authority owns 20 nuclear sites, and estimates that across Britain the task of clean-up and decommissioning will

O'HALLORAN cont: take many decades and cost £50 billion. File on 4's been given access to the site that poses by far the biggest problems.

ACTUALITY AT SELLAFIELD

O'HALLORAN: On the coast of Cumbria, Sellafield. One and a half squares miles, jam-packed with a jumble of chimney stacks, cooling towers, pipework, and vast rectangular sheds. One of those halls encloses the Windscale plant where Britain's worst nuclear accident - a reactor fire - occurred in 1957. In radioactivity terms Sellafield contains about two thirds of all the nuclear material in Britain.

ACTUALITY INSIDE SELLAFIELD

IRVING: As you can see we're now standing in the main part of…

O'HALLORAN: To show us how clean-up work is going staff took us to a complex called B241. It contains eight giant tanks which were filled with radioactive sludge. But years ago the tanks showed signs of disintegrating, with a danger of spilling their hazardous contents around them. So, a vast new hangar like building was erected to enclose the area and work's now begun to empty the tanks.
Well we've now come into the main building housing the tanks of sludge. It is a very long building, its more than the width of a football pitch and I can now see all the tanks. Each one is about 10 meters high, something like that, and only one of these tanks has so far been emptied of its sludge, is that right?

IRVING: That's correct yes.

O'HALLORAN: Which is the one that you've emptied?

IRVING: It's the one right down at the far end of the building there.

O'HALLORAN: Project Manager Ian Irving says the task of getting the radioactive sludge out has to be done carefully and methodically.

IRVING: The objective is to remove the material from these tanks, the sludge material, to then concentrate that to limit a quantity of material that needs to be finally disposed. Then to take that concentrated material, place it in stainless steel drums and grout it, put concrete in to form a solid material which is inherently safe and passive for long term storage.

O'HALLORAN: But the process isn't quick and it isn't cheap. The capital costs were £120 million and emptying the tanks is costing £3 million a year. That's just 1% of the total yearly clean-up bill at Sellafield. The site is operated by the publicly-owned British Nuclear Fuels – BNFL. Their decommissioning plan is on a mind-boggling scale. It stretches out 145 years ahead, about three times longer than the era in which we've had nuclear power so far. The estimated cost - £32 billion, says Sellafield Managing Director Barry Snelson.

SNELSON: We have inherited this legacy but our talents now should be focused on reducing that amount of spend and bringing it forward.

O'HALLORAN: The nuclear industry as a whole suggests that standards are being improved greatly in the last 10 or 20 years, things are done much better, things are done in a cleaner way, done more efficiently, is that right?

SNELSON: Well absolutely, on Sellafield site there's been a programme over the past number of years to reduce discharges, to improve all sorts of things and to improve the long term storage of waste.

O'HALLORAN: But recently Barry Snelson got a nasty shock, over events in one of Sellafield's most controversial plants.

ACTUALITY ON SITE

O'HALLORAN: We're standing with two of the cooling towers at the old Calder Hall reactors on our left. In front is a large beige coloured building in about three sections. What is this and what is its significance?

PIERSON: The facility you can see is the thermoloxcide reprosessing plant and this plant is commonly known as the Thorp facility. The facility is approximately one third of a mile in length…

O'HALLORAN: The Thorp plant was fiercely opposed by environmentalists. They said it would create greater volumes of nuclear waste. It's been operating for ten years. It's had its ups and downs, but two months ago a serious internal leak of highly radioactive liquid was revealed there. 83 cubic meters of the material, containing large amounts of uranium and plutonium spilt onto the floor of a containment area. Production was shut down and the plant is still out of action today. No workers were contaminated. But Barry Snelson says the size of the spill and, perhaps even more importantly, the time taken to detect it, are matters of great concern.

SNELSON: In April we discovered that a pipe had broken in a cell called a feed clarification cell and the pipe had broken through metal fatigue.

O'HALLORAN: So this big leak, what is it, 83 cubic meters of radioactive liquor began approximately 3 months before you discovered it?

SNELSON: Yes, on about the 14th of January the pipe parted completely although it had been weeping through a slight crack before then and obviously we are disappointed and upset that it took 3 months to spot the material. The investigation makes the point that it could and should have been discovered sooner so that is a point we've taken to heart and we've taken all the remedial action required.

O'HALLORAN: But a statement from the company three weeks ago suggests things began to go wrong with the pipe carrying the radioactive liquid long before last January.

READER: "There is some evidence that the pipe may have started to fail in August 2004."

O'HALLORAN: So the leak had been going on nearly 3 times as long as was first suggested. Such a long delay in discovering the problem has raised questions of

O'HALLORAN cont: safety, engineering, and management across the whole of the Sellafield site, as Barry Snelson concedes.
Do you think the pipe was cracked and leaking last August?

SNELSON: Yes, we think that's the case, that's what the enquiry reports.

O'HALLORAN: So the leak began about nine months before you actually discovered it?

SNELSON: Yes, it started with a slight crack and a weep and that should and could have been detected that's the enquiries findings.

O'HALLORAN: You say that standards are much better nowadays and that you do things very well, efficiently and so on but here you have scores of cubic yards of highly radioactive liquid spilling out of a pipe for month after month and you don't know its happening, how do those two things square up?

SNELSON: Well I am disappointed that that is the case but that is actually what happened. Obviously it is not good that signs were missed but nobody was injured and the material did not enter the environment and is being safely recovered. We will take on board all the learning from the board of enquiry, all the recommendations were re-implemented. I give my full assurance that that will be done not only in Thorp but all across the site.

O'HALLORAN: How long is this going to put the plant out of action for, that part of the plant?

SNELSON: We have a number of options that we're looking to, to bring the plant back into service but it will be number of months I think yet.

O'HALLORAN: It's now reported that some top BNFL executives will have their bonuses cut in the wake of the leak. The Nuclear Installations Inspectorate is now investigating and it says it has a range of sanctions available including criminal prosecution.

O'HALLORAN cont: A recent report from the inspectorate says 3 workers were contaminated in a separate incident at Thorp earlier this year. The big leak affects not just safety but hard cash. The shutdown at the Thorp plant over several more months will hit not just the operators BNFL, but the Nuclear Decommissioning Authority. That's because, as the new owners of Sellafield they stand to get an income of around £3 hundred million a year from Thorp's operations, when it's working normally. That money is part of the authority's annual national clean-up budget of £2.2 billion, says chairman, Sir Anthony Cleaver.
So if that plant is effectively closed for business for month after month after month then that's going to hit your income isn't it?

CLEAVER: Yes and over time we would therefore have to see how big that hit is and whether it's something that we can accommodate by readjusting the programme of work that we do or whether it is something where we would have to go back to government and say we believe that this work needs to be done now, has to be done on this timescale but therefore there are additional costs that we can't match so that's something we will have to tackle as we understand the true situation.

O'HALLORAN: From what you say, if the Thorp plant was closed for 4 months that would hit you by £100 million, your income, 8 months £200 million, a year £300 million and so on.

CLEAVER: It isn't quite as simple as that, I don't think obviously we could get into that. All I can say is there would be an impact but it certainly isn't a straight line impact like that.

O'HALLORAN: Sir Anthony Cleaver didn't take the opportunity to rule out early closure of Thorp, currently due to continue reprocessing till 2010. If there's a clampdown by safety regulators after the leak, that too could have cost implications at Sellafield. Energy Economist Dieter Helm, of New College Oxford, says the nuclear industry has been bedevilled in the past by the sudden revelation of new liabilities and costs, which usually fall to the taxpayer.

HELM: It's not so much whether it costs this much or that much, it's the capacity to get really bit cost shocks, it's the variance, its how much the costs could go

HELM cont: from to X to 10X or 20X whatever and that I think is a particular characteristic of the Nuclear industry that when things go wrong costs escalate pretty quickly. Now it seems to me in a monopoly structure that we've had in the past, in a closed site like Sellafield, the combination of the monopoly management, high unionisation and lack of transparency is bound to breed those sorts of problems.

O'HALLORAN: But at Sellafield the casual visitor is in for cost shocks here and now. Take an area where spent fuel from Britain's Magnox nuclear reactors is stored in a large tank or "pond". It's known as B-30 and it's clean-up costs are running at tens of millions of pounds a year. We weren't shown it. Radiation levels are so high there that a worker without shielding could sustain an annual maximum permitted dose in just over a minute. But pictures have been published.

ACTUALITY WITH PICTURES

LARGE: You can see here for example this first photograph shows the B-30 ponds, its just like a large swimming pool, a very large swimming pool, you could float a ship in this.

O'HALLORAN: Independent nuclear engineer John Large blames management at Sellafield for the dire condition of this cooling pond.

LARGE: The problem here is that you're storing fuel in water that can be contaminated and corrupted. Once the water becomes corrupted and slightly acidic it corrodes the fuel, the fuel particles make the pond very murky so you can't see how much fuel is down there. So it means that British Nuclear Fuels don't really know what's going on in their facility. If they can't manage the inventory controls on a pond like this, what is going on with the rest of the plant at Sellafield?

O'HALLORAN: The state of the B30 pond has attracted the attention of both the European Commission and the inspectors whose job is to police the Euratom Treaty against nuclear proliferation.

LARGE: Fuel has been discarded and left in those ponds for many a year, without any control I mean to the extent that the Euratom inspectors lodged a formal complaint against British Nuclear Fuels reluctance to actually clean up the water of the pond so they could actually have a visual inspection of what laid at the bottom of these murky depths. So under our treaty, the Euratom treaty where we have to enable inspectors to inspect these plants, they've been threatening to take BNFL to court for some years over this.

O'HALLORAN: That threat was made explicit last September, when Britain was told it would be taken to the European Court. Proposals for the clean-up of B-30 had been rejected by the European Commission. The Energy Commissioner said the project wasn't detailed enough, and didn't have the status of a formal government plan. Nuclear Decommissioning Authority chairman, Sir Anthony Cleaver, says it's up to BNFL and its subsidiary British Nuclear Group to make progress.
How concerned are you by the European Commission taking Britain to the European Court of Justice over the issue of the B-30 area?

CLEAVER: I think that's an issue for government and for the DTI.

O'HALLORAN: But the European Commission is doing this because it says it has lack of dates for decommissioning, lack of detailed description of the work to be done and a bunch of other details which it would seem that the nuclear decommissioning authority ought be taking a great interest in?

CLEAVER: Obviously we are working very closely with British Nuclear Group at Sellafield as we do with the contractor on each of the sites to make sure we understand just how they are addressing the major issues.

O'HALLORAN: Do you have any idea when sufficient plans and details to satisfy the European Commission might be produced?

CLEAVER: No I have to leave that again to the British Nuclear Group. I don't know when they will be able to satisfy the commission because I don't know what the commission's requirements are in detail.

O'HALLORAN: The cost of this work in just one area of the Sellafield site is a staggering £72 million this year alone and £90 million in the next two years. BNFL says in a statement it's doing its best to enable the Euratom inspectors to do their work.

READER: "The conditions of the plant, and UK health and safety legislation, mean that it is difficult for inspectors to carry out direct, physical verification procedures. We are continuing with our efforts to develop a detailed understanding of the quantities of material in the pond."

O'HALLORAN: But John Large says that in Britain as a whole far too much nuclear waste is in a disorganised state because of lack of a clear national policy over what to do with it dating back at least to the 1980s.

LARGE: The nuclear waste situation in Britain at the moment is a chaotic mess, we import large amounts of fuel that we then generate large volumes of waste from. We have no policy in position, no real management system in position and no means of disposal or safe keeping of radioactive waste. It's in a mess because there's no radioactive waste strategy. There is no principal or policy in place for the storage and eventual disposal of radioactive waste. So it means really the next generation or this generation is handling material that's simply come up virtually by an ad hoc and random process.

O'HALLORAN: The government's plans for long term disposal of nuclear waste hinge on the deliberations of a committee it set up the year before last. Its members have been touring the country consulting small groups of people at public meetings.

ACTUALITY AT MEETING

O'HALLORAN: In a lecture room in Thurso, Caithness, near the Dounreay nuclear site, about twenty people attend a presentation by two members of the Committee on Radioactive Waste Management.

ACTUALITY "and our aim is to make it as easy as possible for the government to say that sounds like a good idea, lets do it. So we have to show"…

O'HALLORAN: The audience were told of disposal options including deep burial, and ground level storage. But also listed in a booklet handed out and produced by the committee, are disposal in space and putting nuclear waste in the sea, which was banned by international law in the early 1980s. The Committee on Radioactive Waste Management began work around eighteen months ago. But it's been hit by serious internal disputes. One member, an expert on the medical effects of radiation, has been sacked, after challenging the committee's methods. Dr Keith Baverstock, a former official with the World Health Organisation, says members spent too much time and money studying unrealistic disposal methods.

BAVERSTOCK: Until March this year the committee was still holding onto the position that it might be feasible to fire this radioactive waste into the sun on rockets or that it might be feasible to find ice sheets to bury the waste in. Now to me these are, well what I call 'whacky options'. They're simply not viable and I think its quite astonishing that the committee kept these on the agenda and commissioned work on them for all that length of time.

O'HALLORAN: So what you're suggesting these, as you would see eccentric options, should have been ruled out in the early weeks of the committee's deliberations?

BAVERSTOCK: For the first few months yes, that's what the terms of reference called for to consider all potential options and then to eliminate those that were not viable quickly. And then that enables you to focus on the options that are really relevant and now is the time that the committee is coming to focus on those options, they could have been doing that more than a year ago.

O'HALLORAN: Dr Baverstock is concerned because he says the committee is only fully concentrating now on the best options yet in just over 12 months it must report to government. The House of Lords Committee on Science and Technology, has also been critical. It said it had spent too long on methods of consulting the public. It also said there were too few technical experts on the committee. The government quickly made more expert help available. But the committee's own expertise has now been further depleted by the loss of a second member. Professor David Ball, a risk management expert, resigned two

O'HALLORAN cont: weeks ago. He says some committee members seemed hostile to people with technical expertise.

BALL: When Dr. Baverstock was sacked from the committee I was deeply shocked. Because Kieth Baverstock was the only real health expert on the committee and how a committee dealing with Nuclear waste could sack its only expert in that area I do not know. But the main problem on the committee is that one has to have a reasonable balance between technical input, which gives you a particular kind of knowledge, and between public input which gives you another kind of valuable knowledge. In my opinion the committee has got the balance on that completely wrong because the particular interest which believe that public knowledge overrides all other forms of knowledge. We have a duty of care to the next generation and thousands of generations ahead of us, therefore the process we use in arriving at a conclusion has to be the very best, nothing else will do.

O'HALLORAN: The Committee's chairman is Professor Gordon McKerron, an energy economist from Sussex University. He says on such a controversial topic disagreements were inevitable. He denies that the committee were hostile to scientific and technical expertise. Rather, he says, they were keen to test public opinion. He insists they're now progressing well and will report as planned in July next year, despite the recent setbacks.
So a member sacked, another member, Professor David Ball, has just resigned. To lose one member is unfortunate, to lose two might appear to be careless to misquote Oscar Wilde.

MCKERRON: Well, I regret very much that we have lost two valuable members of the Committee but I'm afraid it's one of those things that has happened, we have to live with it and I don't think it affects the effectiveness with which we are operating.

O'HALLORAN: Why didn't you dispose of the eccentric whacky or illegal ideas like burial at sea or firing nuclear waste into space on day one and save yourself a lot of time, energy and money?

MCKERRON: Well, there are very good reasons why we didn't do that and the most important single reason is that we feel it necessary to work openly and to leave a very clear audit trail. So if we are going to reject options we had to set up criteria by which

MCKERRON cont: they are rejected.

O'HALLORAN: But these ideas are barmy aren't they?

MCKERRON: Not necessarily. They are all ideas which scientific communities and governments at some point in the past have taken very seriously and spent serious research money on.

O'HALLORAN: But burial at sea today is totally illegal, it has been for I think more than 20 years.

MCKERRON: Yes. The important point though is that we are charged with looking at long term options and if they seem to have some possibility or scientific credibility we had at least to take a quick look.

O'HALLORAN: Given all these problems, isn't there a danger that your conclusions will not carry the weight they should do when you are due to report?

MCKERRON: Well, clearly there's always that danger and we would hate to be in any way complacent. We are putting in place a great deal of effort now to make sure that whatever recommendation we come up with is based on the soundest possible science and is technically credible. But also that it will inspire the greatest amount of public confidence by engaging fully and openly with the public at all stages.

O'HALLORAN: But even when the committee does report next year it won't name any actual sites. After half a century of nuclear power in Britain the industry is at a crucial turning point. Does it just wind down and go over to full time clean-up? Or in the face of climate change and the need to cut emissions from coal, oil and gas, does it get the chance to build a brand new generation of nuclear power stations? Energy economist Dieter Helm says that if the industry is to win a new lease of life it has a big job ahead convincing the public. A task not made easier by the recent leak at the Thorp plant at Sellafield.

HELM: Everybody in the nuclear industry must realise that the public doesn't operate on the basis of the technical qualities of this sort of power station or

HELM cont: that sort of plant. To the public generally, rightly, it's all nuclear. And their view is gonna be, "Can we deal with this stuff properly or not?" So when an accident happens at Thorp or elsewhere, which may have nothing whatsoever to do with a new generation of nuclear power stations, it is not surprising they say if we can't trust you with this why can we trust you with a new power station. And that's why all nuclear industry need to make Nuclear Decommissioning Authority work and they have to get politicians to make the kinds of decisions about long term waste strategy which enables us properly to put to bed what has not been a very successful 50 years so far.

SIGNATURE TUNE