ECONOMICS AND INDUSTRY STANDING COMMITTEE

INQUIRY INTO SAFETY-RELATED MATTERS RELATING TO FLNG PROJECTS IN AUSTRALIAN WATERS OFF THE WESTERN AUSTRALIAN COAST

TRANSCRIPT OF EVIDENCE
TAKEN AT PERTH
THURSDAY, 27 NOVEMBER 2014

Members

Mr I.C. Blayney(Chair)
Mr F.M. Logan (Deputy Chair)
Mr P.C. Tinley
Mr J. Norberger
Mr R.S. Love

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Hearing commenced at 1.10 pm

Mr VICTOR ROBERT JUSTICE
Chief Executive Officer, Kimberley Ports Authority, examined:

The CHAIR: Welcome. On behalf of the Economics and Industry Standing Committee, I would like to thank you for your appearance before us today. The purpose of this hearing is to assist the committee in gathering evidence for its inquiry into safety-related matters concerning FLNG projects in Australian waters off the Western Australian coast. You have been provided with a copy of the committee's specific terms of reference. At this stage, I would like to introduce myself and the other members of the committee here today. I am the Chair, Ian Blayney. With me is the deputy chair, Fran Logan; Shane Love, the member for Moore; and Peter Tinley, the member for Willagee. The Economics and Industry Standing Committee is a committee of the Legislative Assembly of the Parliament of Western Australia. This hearing is a formal procedure of the Parliament and therefore commands the same respect given to proceedings in the house itself. Even though the committee is not asking witnesses to provide evidence on oath or affirmation, it is important that you understand that any deliberate misleading of the committee may be regarded as a contempt of the Parliament. This is a public hearing and Hansard is making a transcript of the proceedings for the public record. If you refer to any documents during your evidence, it would assist Hansard if you would provide the full title for the record.

Before we proceed to the inquiry's specific questions we have for you today, I need to ask you the following: have you completed the "Details of Witness" form?

Mr Justice: I have.

The CHAIR: Do you understand the notes at the bottom of the form about giving evidence to a parliamentary committee?

Mr Justice: I do.

The CHAIR: Did you receive and read the information for witnesses sheet provided with the "Details of Witness" form today?

Mr Justice: I did.

The CHAIR: Do you have any questions in relation to being a witness at today's hearing?

Mr Justice: No.

The CHAIR: Do you have an opening statement for us today?

Mr Justice: I am just pleased to be able to meet you and discuss this with you and hopefully I will be able to answer the questions in the nature that you want them answered.

The CHAIR: Thanks; that is great.

Mr F.M. LOGAN: Vic, just before I ask the first question, could you maybe explain to the committee how long you have been up there at the Kimberley ports and also your experience of the Kimberley region just so that we have got it for the record?

Mr Justice: Certainly. I have been with the Kimberley Ports Authority, formerly the Broome Port Authority, for eight years. In that time, I have evolved the port operations primarily towards the support of the offshore oil and gas industry in many ways, part of which is the safety for offshore. We have been involved fairly closely with the oil and gas companies—Shell, Woodside, Inpex, Santos, Apache, BHP and so forth—and we also have combined safety forums. I went to an Inpex

safety forum just several weeks ago. We work very closely with them in terms of finding out what they need and what they need to know, and also what we need to know in support of them and primarily their logistics and their vessels that come in and out of the port. I have been operating in the north west region since 1980. From 1981 to 1982, I was the master of a self-propelled, semisubmersible drilling rig, the *Ocean Prospector*, and that was the rig responsible for quite a few of the gas discoveries, including the Gorgon that is underway at the moment. After that, I went into port and terminal operations, and in the course of that I worked with Western Mining at the Airlie Island terminal, which was a crude oil export operation. I worked with a range of organisations at what is the Varanus terminal near Barrow Island—Hadson Energy, Bond Petroleum and Apache. I did some work offshore with an FPSO, which is the Wandoo platform, and, generally speaking, at the port of Dampier, when I was the harbour master there, I did a similar role to what I am doing now, which is the support of oil and gas. We have a major oil spill exercise going on at the moment down at Fremantle, and my harbour master and safety and environmental manager are there at the moment taking part in it. Back in my time, about 10 years ago in Dampier, I ran and managed the first of the modern-day state oil spill exercises, with about 150 people attending, and that was so big and so successful it was regarded as being a national exercise. That was the genesis of having the same sort of exercise every two years. That, plus the fact that during my career I have been a marine pilot and I have piloted probably the world's largest bulk ships of about 300 000 tonnes, maybe 350 or 360 metres in length, I have a good idea about large vessels. Certainly, they are only about half the size of the FLNG, but I have a good handle on large vessels from a practical sense, and also I believe I have a reasonable grasp of the oil and gas industry in the north west.

Mr F.M. LOGAN: Fantastic; thanks for that overview.

Mr P.C. TINLEY: So you know a little bit about it!

Mr Justice: A little bit!

Mr F.M. LOGAN: You are the right person to talk to about this. Excuse me for reading this, but this is one of the key areas that we want to talk about. In the Kimberley Ports Authority submission, it says that the field development fleet, including pipe-laying barges, supply vessels et cetera, will be subject to safety management and emergency response plans, particularly in light of the paucity of shelter from cyclones along this stretch of coastline. Can you just expand on that for the committee? For example, who prepares those plans? Who assesses them and approves them? Are they updated; and, if so, how often?

Mr Justice: The problem we have geographically with the north west coast is that there are very few sheltered inlets or places where vessels can run to escape a cyclone, and that is one of the reasons why, when a cyclone is about 350 or so miles away from an installation, they start demobilising them so that they can then release their vessels and allow them to run. Primarily, what the vessels need to do is to move off into the safe quadrant of the cyclone. A cyclone is a circular organisation, and it is split into a vertical and a horizontal area that divides it up into four quadrants. So the vessels go off into the safer quadrant, which is probably about the nine o'clock to 12 o'clock section of the circle, if you think of your watch face—unless you have got a digital watch. What they do is they move up in that one because here, because of the Coriolis effect, the cyclone will, generally speaking, curve around in a counter-clockwise direction. That is why they cross the coast. They form up offshore, come down the coast, curve around and generally go across the coast. So, if the vessels move away, that is the best thing that they can do because they ride it out at sea.

[1.20 pm]

The trouble you have is that if you have many of these vessels and some of them have to be towed, they can only move very slowly. It is very difficult trying to tow something that can only be towed at three or four knots when a cyclone might be coming down the coast at 10, 12 or 15 knots. One of the big, difficult tasks I had to undertake when I was the harbourmaster in Dampier was to put in place a management plan for the Chevron Gorgon construction fleet. At one stage they had some

70 vessels of all shapes and sizes down there in the construction; I am not sure what they are now. But in the event of a cyclone they virtually had very few places to go. What eventually happened was that we put in a whole range of cyclone moorings within the port, mixed up in the islands, and that took quite some negotiation because that was also an indicative marine park as well. So there was this mixture problem. But that is only for down there. When you move further north, even the port of Broome is only slightly sheltered. So, in the case of the new fields that are being established offshore, the vessels that are going to be involved in the pipe laying and the construction and putting in all the different subsea fit-outs are going to have to come up with some very robust plans to prepare for cyclones. Their cyclone response plans are going to have to be very well thought out and very well managed. What we do at the port of Broome is we shut down the port late, because what we do is we take into account the fact that the vessels that are offshore, when they are finally released have about a 20-hour passage to get into Broome—it is a lot longer to get into Darwin. For them to be able to remain at sea, they do not know how long they are going to have to ride out the cyclone for, so we accept them in and we top them up with fuel. They cannot ride out a cyclone if they have pipes on the deck, because if the pipes are stacked up on deck and a wave comes from behind and fills those pipes, it puts top weight in it. It is the old story of if a man sits in the canoe, no problems; if the man stands up in a canoe, you do have stability problems. Overseas there have been one or two cases of these vessels suddenly capsizing and losing people—that is the supply vessels. But in the case of the construction and pipe-laying vessels, you can have up to 100 or more people on board. The speed problem I spoke about before is an issue, and there is also a demobilisation issue in terms of how long does it take you to get a helicopter out that might take 20-odd people, to pick up 100 or more people off one of these vessels and take them off. When the vessel is demobilised, then the crew that remains has to do whatever they need to to cater for the cyclone. Cyclone management is very difficult.

Mr F.M. LOGAN: Just on that cyclone management, we heard yesterday—actually we have heard before—of an incident in the gulf from Broome. I think it was a construction barge called the—it was an Italian name. I think it was for Blacktip.

The CHAIR: *Saipem Castorone* something or other.

Mr F.M. LOGAN: It had real problems, and the problems were the demobilisation was too late.

Mr Justice: Yes.

Mr F.M. LOGAN: The argument was—I just would like to hear your views on it—and the position that was put to the committee, was that on the decision-making and orders and directions that should have been given to the captain, there was hesitancy between AMSA and NOPSEMA on who had authority, when the cyclone was coming in, about the demobilisation—how it was to occur. Did you hear anything about that?

Mr Justice: I have heard a number of cases of this type of thing happening, and in many cases it has several causes. The first one is commerciality versus safety, which is always a problem with vessels and cyclones. The second one is the lack of clear information flow, where the people who are in a position in, say, Canberra to make a decision or NOPSEMA or whoever, they do not know that the cyclone is developing and where it is going and so forth. They may not necessarily be getting the information fed to them. In a lot of cases it becomes almost a local call. I have not heard of that specific incident but I have certainly heard of many of them where the demobilisation and the evacuation at the start has been left a bit long.

The CHAIR: In your submission you say that the most challenging superstorm safety risk that might confront the Kimberley region emergency authorities and responders is an FLNG barge breaking adrift from its moorings, with no ability to move under its own steam and vessels unable to pick up a towline in such conditions. What would you describe as a superstorm? What category cyclone would you call a superstorm?

Mr Justice: Anything of cat 5 or higher.

Mr R.S. LOVE: Just in responding to a situation where, I do not know, the worst-case scenario is that the FLNG was to break free, what would your involvement as the Kimberley Ports Authority be in providing some sort of assistance to people wanting to respond to that situation?

Mr Justice: In that scenario the only assistance we could provide—because the weather would be too dangerous to try to send anyone out—would be to help track the vessel with our AIS—our automated identification system. If that barge is still transponding its AIS signal, we could track it and be able to relay its position. I did this at Dampier when one of the FPSOs broke loose, and that was going full ahead into the wind but it was making ground towards Barrow Island at four knots. The only reason that one did not go aground was that the captain decided to alter his course at an angle and he managed to sort of track sideways.

Mr F.M. LOGAN: He used the wind to push it sideways.

Mr Justice: Yes. He had actually broken free.

Mr F.M. LOGAN: Was that an FPSO vessel that had already dropped its hook up?

Mr Justice: It had broken free in a cyclone.

Mr F.M. LOGAN: Had it really? Wow. It had not disconnected and gone and stood off?

Mr Justice: To the best of my recollection, it had broken free. There have been one or two incidents where there have been a parting of the FPSO or FSO teams. On that particular occasion I could not guarantee that that was what was happening, but to the best of my recollection it broke free. I do not think they intentionally dropped the —

Mr F.M. LOGAN: Dropped the riser.

As a point of information, you know where Prelude is expected to be located.

Mr Justice: Yes.

Mr F.M. LOGAN: What is the steaming time between Prelude, say, for a supply boat between Prelude and Broome?

Mr Justice: It is approximately 20 to 22 hours.

Mr P.C. TINLEY: So, Vic, you were saying that when a superstorm comes, or—it does not really matter—bad weather, some operations are halted in some fashion, do the vessels come to port to revictual and so on to ride it, or do they come to port for a safe haven?

Mr Justice: No, they only come in to top up with fuel so they have enough fuel on board to —

Mr P.C. TINLEY: So it is in and out?

Mr Justice: Yes, and also if they have deck cargo that could break free, bearing in mind that when you are in bad weather on a ship chains break, and the last thing you want is a container or a bit of heavy equipment sliding around.

Mr P.C. TINLEY: So the standard operating procedure is to stay out, and to try to find the safest water possible and ride it out?

Mr Justice: Yes.

[1.30 pm]

Mr P.C. TINLEY: What sort of warning time do you think they have? You were saying that at 350 nautical miles people make decisions about cyclones. What sort of time frame does it allow for a shift or a vessel to get in and out?

Mr Justice: It can vary; maybe 30 hours or thereabouts. One of the advantages that people have out in the Browse and Prelude areas is that cyclones generally go off the coast in the form of a tropical

low up around Wyndham or maybe a bit north of Derby. They move off the coast and they sit there and gather strength and as they gather strength, they start to move down the coast. The further down the coast they get, usually the stronger they become. From the FLNG area of operation, if the cyclone comes through from that direction, coming off the coast it is probably likely to be, from my observations over the years, a cat 1, cat 2. If a cyclone, however, comes in from say, Sumatra, or in that area, they could have problems. For example, Rosita came through and destroyed a lot of houses and so forth in Broome and caused quite a few issues. If you look at a map of cyclones, that is certainly the area that I would be concerned with.

Mr P.C. TINLEY: And a less responsive time as well.

My next question is one of capacity. What is the capacity of Broome port to attend to the critical requirements of the vessels in the area? How many can you cycle through to top them up and get them out?

Mr Justice: We can cycle through a lot of vessels very quickly, because if we are getting rid of deck cargo and providing them with fuel, we can probably turn around one vessel in about five hours, which we have done in the past. We can fit five of these vessels comfortably alongside.

Mr P.C. TINLEY: A typical sized vessel that services these things?

Mr Justice: Yes. Basically, we can easily put through 10 or 15 of these vessels in a 15 to 20-hour period.

Mr P.C. TINLEY: To follow that through, noting from all the evidence we have received that FLNG seems to be the sort of technology that they want to use and that there will be a lot more of these off the coast, with an increase in servicing vessels and all those sorts of things, do you have concerns about the capacity of the port to actually service three or four FLNGs off the coast in Browse?

Mr Justice: I have yet to be briefed by Woodside or Shell about how they intend to run their operations. I have picked up quite a bit of it. My understanding is that once they are in place, they will each have something like three tugs. They will also have a couple of the supply vessels carrying out exploration and other work in the vicinity. The tugs are no problem; we can service those. We can cope with the couple of rig tenders that are associated with that field operation. What we cannot cope with is the construction fleet.

Mr P.C. TINLEY: The construction fleet?

Mr Justice: Yes.

The CHAIR: Is that because the vessels are too big to get into Broome port?

Mr Justice: No, it is not that; it is the fact that there are so many of them and that some of them have to be towed.

The CHAIR: What is the largest vessel that can come into Broome port?

Mr Justice: We bring in very large vessels, such as the *Sun Princess* cruise liner and that type of vessel. As long as a vessel is of nine metres draught, we can bring them in and we have the tug power and so forth. If there were an emergency, we have a limitation on the wharf, which is that a vessel that is berthing should weigh no more all up than 40 000 tonnes. But if there were an emergency, we would waive that because safety is overriding.

Mr F.M. LOGAN: As you probably know, when faced with a cyclone and an imminent hit by a cyclone, unlike other offshore installations, Prelude will not de-man. Shell told us that at all times it will have two FLNG tenders on standby out there. If a cyclone is bearing down on the facility, those tenders will not be there—will they? There is no way.

Mr Justice: I cannot believe that they would be there, because when there is an extreme bad weather event, I cannot see that they would remain on station because it would be hazardous to

them. Furthermore, once the weather gets bad—and by bad, the Rankin A platform recorded 30-metre seas during a cyclone while at the same time in the port of Dampier, we had 15-metre seas. You cannot take on a tow in 30-metres seas. The vessel would be rolling its heart out. Just trying to stay on its feet in that sort of weather would be a difficult task.

Mr F.M. LOGAN: If those vessels take the normal course of action and go to a quadrant in the cyclonic area where they will be safe, effectively the FLNG and its staff will be out there on their own during a cyclone. There would be no helicopter access and no boat access.

Mr Justice: There would be no way of taking them off and there would be no way of towing it, which is why I raised that as the worst-case scenario. I had to sail a ship from Dampier once. It was a 240 000-tonne ship. That ship was retained in harbour longer than what it should have been. When I took it out, I had to run up the coast and the vessel was rolling from the portside deck under water to the starboard-side deck under water in about —

Mr P.C. TINLEY: Stop—I am getting seasick already!

Mr Justice: That was 15 seconds. Because it was happening so violently, all of the fittings inside the ship, everything that was not welded, broke free. All of the bunks, the galley fittings, the tables—everything that was not welded—broke free.

Mr P.C. TINLEY: Did anyone get hurt?

Mr Justice: Somebody fell out of bed and landed on some drawers that had come out. I do not know enough about the FLNG stability or structural conditions to make comment on what would be the result there.

The CHAIR: Just following on from that, do you have any idea—this will be hard for you to answer, but I will ask. It flows on from the issue of confidence you would have in the strength of the mooring systems of the FLNG out in the Browse Basin in the event of a category 5 cyclone.

[1.40 pm]

Mr Justice: All I can go on is what I have read. I have tried to read up on some of the specifications from the various publications that have been available. They are meant to be very strong for deep water use. They are meant to be able to hold out in a category 5 cyclone, but category 5 is the top end of the 1, 2, 3, 4, 5; what do they mean? I guess they probably have to say a one-in-100 or a one-in-1 000-year storm. I know that companies like Shell in particular, because it also has vast shipping interests, is very conservative in what it does and in its engineering design, so I would hope that it has gone through that in some detail.

Mr R.S. LOVE: In the submission you sent the committee, you referred to the shipping lanes off the North West coast now becoming a little bit busy, which represents a potential risk of collision —

Mr Justice: It does.

Mr R.S. LOVE: — to the vessels. Can you expand on that a little bit? What would be required to amend a shipping lane? Is it a matter of government regulation or is it just the closest and most economic path through? How would a review of the shipping lanes be initiated?

Mr Justice: We did this out of Dampier and it turned out to be a fairly straightforward process. One of the things that caused that to come up was not just one but multiple cases of ships that were sailing from various ports and going through the oil fields with nobody on the bridge. They just set the autopilot and steamed through. I am not sure where the bridge watchkeepers were; they might have been down grabbing some food or a cup of coffee; I do not know. But one photograph that came in off one of the rigs was a photograph of the ship taken down through one of the side sponsons of the rig and the ship was underneath. It had passed within 50 metres. The ship had been hailed on by radio from about eight or nine miles off, but nobody answered the radio. It was just

good fortune that the ship missed. What happened out of that was that, I think, one of the Woodside managers went to Canberra and he spoke with AMSA and came up with a safety case to have a passageway through the oil field and also for a circular zone, a ring of confidence, around the specific rigs. Just this week I received a note from Shell and it is looking at establishing a 500-metre ring, which is not enough.

Mr R.S. LOVE: That is fairly tight.

Mr Justice: It is not only tight, but when you think about it, you have an approximately 500-metre long barge. If this is the front of the barge and that is your catenary for your mooring like that, down here somewhere is the central mooring position and they have a 500-metre radius zone around that. That will pass around about through the middle of the —

Mr F.M. LOGAN: Moorings.

Mr Justice: What you probably need to be safe is one and a half miles, which is about 1 500 metres radius. If someone is going to set up the path on the autopilot, they will track the path that they are taking clear of obstacles and so forth. If they set it up for just 500 metres, then —

Mr P.C. TINLEY: So it will be on charts for seafarers; all those things are being identified?

Mr Justice: Yes, both paper charts and electronic charts. These days, a lot of vessels just navigate by electronic charts and they also have their passage plan laid on that electronic chart and the autopilot follows up. If they get off track, then alarms go off, even if somebody is not bothering to look out front. It does happen, unfortunately. Hopefully, with alarms going off, the captain should hear in his cabin, the engineer should hear and, hopefully, the watchperson will get back and do his job.

Mr F.M. LOGAN: Someone will get on the bridge.

Mr Justice: Yes.

Mr R.S. LOVE: In terms of a shipping lane, is there a designated shipping route or is it just exclusion areas around bits and pieces?

Mr Justice: On the charts generally there are what they call recommended routes. Generally speaking, these are just a guide. They generally come from an area where there is a conflux of shipping to another conflux of shipping. In terms of areas such as the Great Barrier Reef and the North West Shelf, there are shipping lanes that the vessels go through. They take into account the fact that the drilling rigs are mobile so they are drilling in one location for say a month or two, maybe three months, then they shift to another position. So the ship may not have picked up the notice that says that that rig has moved. So if you have a designated shipping lane, it means that there will be no drilling in that shipping lane. If they are passing through, it elevates the confidence level for both the shipping and oil industry.

Mr P.C. TINLEY: In terms of risks with a growing offshore oil and gas sector, there is more associated sea traffic around it as opposed to anything specifically related to an FLNG. The confidence we have with Shell's capacity to get its safety systems right is contingent only on those people who move around them and work with them being consistent. Is that a fair statement that they have to be consistent with their safety plans?

Mr Justice: I think so. In terms of risk management, I think that there is a higher likelihood of an idiot at loose rather than a cyclone.

Mr P.C. TINLEY: I believe that there is an intention in terms of the privatisation of our ports; I am sure you are aware of it. What implications will that have on your port in relation to safety in the oil and gas sector?

Mr Justice: I am not really sure what will happen longer term with the port in terms of privatisation primarily because, with our regional role, we need to have a cash flow, and if we no longer have

a cash flow from the port, my good friends at Treasury are not overly generous and we would have difficulty carrying out our role. Be that as it may, the job of a port authority—regardless of whether that port authority is a landlord operator, which is the privatised port, or whether it is a services model—under the Port Authorities Act, we still have a very strong obligation towards safety and the support of shipping and the environment and so on. We would have no excuse to drop the bundle.

[1.50 pm]

Mr F.M. LOGAN: Can you explain the interaction between the KPA and AMSA? Is that interaction similar to the relationship between Kimberley Ports Authority and the Department of Transport? Also, in your submission you said that AMSA has recommended a coastal vessel traffic service be established for north west waters. Can you explain that?

Mr Justice: Firstly, we have a very strong relationship with the Department of Transport. I have a personal relationship with people in AMSA. I make sure that they are kept fully abreast. I ring the Fremantle office and speak with the WA manager or his 2IC on a number of things. I have encouraged my harbourmaster to do exactly the same thing. We also have a good relationship in terms of emergency response. If something goes wrong, I have the ability to call on both state and national assistance. If needs be, I can jump straight to national. There is a very robust arrangement for emergency response, both state and federal. There is also, as it happens, a very good arrangement between all of the commercial operators and the port authority where they have their local stockpiles and they have training sessions and drills that we take part in. If something goes wrong—for example, the West Atlas Montara fire and oil spill—we can trigger support for things like that. We offered up to 20 people to do the legwork as required for that and a couple of them did go, but that was towards the tail end of it.

In terms of the coastal management scheme, that was a recommendation because at the moment many of the bulk ships, in particular, are coming down the coast and going back—the 5 000 or 6 000 vessels a year at Port Hedland and the same at Dampier, plus the other ports. You also have the inshore domestic traffic—cruise vessels and that type of thing. You have interaction with marine parks and with all the whales and whatever. Putting all that together, David Harrod, who used to work over here in Fremantle, and the AMSA people had quite detailed discussions and the recommendation was to control shipping, probably not quite so stringently as what occurs on the Great Barrier Reef, but in a similar way. By taking charge, it would reduce the risk tremendously. One of the big problems on the Kimberley coastline is the fact that, firstly, it is a drowned coastline. There are no roads and not much land access. If you look at the number of ports between Darwin and Dampier, there are very few launching points. We had a helicopter that went in off one of the smaller coastal cruise vessels and there was very little we could do about that. The aim of this coastal ship management scheme was to take charge of shipping to reduce risks and to put in place a system of response if anything did go wrong.

Mr F.M. LOGAN: Where is that coastal management plan up to?

Mr Justice: The best I can say is that I think it has run out of steam.

The CHAIR: Who is looking after that; whose court is that in?

Mr Justice: That would have to be a state and AMSA matter. I have not heard anything of that for probably two years.

Mr F.M. LOGAN: Does the Kimberley Ports Authority have a relationship with NOPSEMA?

Mr Justice: No. I have met with representatives from NOPSEMA, or its predecessor, in exercises, but, no, we do not. Its primary role is offshore and our primary role is within coastal waters.

Mr F.M. LOGAN: Is it possible for you to provide information on what the Broome port would need to improve its role in offshore safety? If it were a golden opportunity for the Kimberley Ports Authority, what more do you need?

Mr Justice: I have spoken with my chairperson, Laurie Shervington. He is very happy for us to provide any information or support.

Mr F.M. LOGAN: Loraine will contact you about that.

The CHAIR: Thank you for your evidence before the committee today. A transcript of this hearing will be forwarded to you for corrections of minor errors. Any such corrections must be made and the transcript returned within 10 days from the date of the letter attached to the transcript. If the transcript is not returned within this period, it will be deemed to be correct. New material cannot be added via these corrections and the sense of your evidence cannot be altered. Should you wish to provide additional information or elaborate on particular points, please include a supplementary submission for the committee's consideration when you return your corrected transcript of evidence.

Hearing concluded at 1.55 pm