Alstom Ltd v Yokogawa Australia Pty Ltd & Another (No.7) [2012] SASC 49

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The above matter was heard in the Supreme Court of South Australia in no less than 47 separate sessions over 130 days between December 2009 and August 2011, and the judgment of The Honourable Justice Bleby, running to 469 pages, was delivered on 2 April 2012. The dispute arose out of a contract between Alstom and Yokogawa (as one part of a joint venture known as YDRML) for the electrical, control and instrumentation works forming part of the refurbishment of Playford B Power Station situated at Port Augusta, South Australia. The power station, having been built in the 1950s, was largely manually operated and the refurbishment was undertaken to facilitate its operation by remote control with limited on-site personnel. The works were carried out between 2002 and early 2005.

Alstom’s claims against YDRML were primarily about the consequences of delay (alleged by Alstom to have been caused by YDRML); either as Liquidated Damages, or as costs arising as a result of delay. YDRML denied liability for the delay, and its counterclaims included prolongation costs, loss of productivity and disruption costs, acceleration costs and the return of Liquidated Damages that were alleged (by YDRML) to have been wrongly deducted by Alstom.

The trial dealt only with issues of liability and involved the evidence of a number of witnesses of fact and, crucially, two expert programming witnesses who gave their evidence concurrently (i.e. they were ‘hot-tubbed’). Expert evidence on combustion engineering was also given on behalf of both parties by engineers who were (or had been) employees of the parties and who had worked extensively on the project. The ramifications of that were examined in detail by the judge.

The judgment addresses many issues but there are a couple of specific issues that are of interest to those of us who practice as experts in the field of delay analysis. These are the role and independence of experts, and the appropriateness of delay analysis methodologies.

The Role and Independence of Experts

In addition to the programming experts (about which more later) both parties called evidence from experts in the field of combustion engineering. The subject matter isn’t particularly important (to this paper – it was to the trial!) but what is interesting is that both experts were, or had been, employed by the parties. The judge was careful to note that the fact of employment (or previous employment) by a party did not disqualify either man from giving expert evidence but it did require
that their evidence should be ‘...carefully scrutinized for any hint of bias or influence as to form or content by the exigencies of the litigation’.

Alstom’s expert, Mr Hodge, was at all material times an employee and had also given evidence in the trial as a witness of fact for Alstom. The judge noted that in giving his evidence as a witness of fact Mr Hodge had also given substantial expert opinion although he was not, at that stage, acting as an expert. It was clear to the judge that Mr Hodge had not understood that his duty was to the Court, and that he was required to make a declaration in his report that no matters of significance had been withheld from the Court. Later in the proceedings Mr Hodge did submit an expert report containing declarations that he had read and understood the applicable Practice Direction, and that he had not withheld any matters of significance from the Court. His witness of fact evidence, however, made it apparent that Mr Hodge had been involved with the matter for many years and that he had been part of the team ‘...investigating, advising, preparing and advancing Alstom’s case...’ and ‘...after late 2005 his engagement was almost exclusively for the purpose of advancing this litigation on behalf of Alstom...’

YDRML called a Mr Ironside as its expert. Mr Ironside had resigned from his employment with Yokogawa in 2004 but was recalled because of his knowledge and qualification as a combustion engineer to act as an expert in the litigation. He had been closely involved with the Playford plant, having been YDRML’s Design Manager from March 2002 to March 2004, and having given advice on the plant on a number of occasions since leaving. All of this was disclosed in his expert report, which complied in every respect with the Supreme Court Rules and Practice Directions. He had not been involved as part of YDRML’s legal team and that his statements (if not his expert report) had received considerable input from others. His evidence was also found to be inconsistent, incomplete, factually incorrect and biased towards Alstom. The judge concluded that Mr Hodge’s evidence, both as a witness of fact and as an expert, was so contaminated by these matters that it could not be accepted.

It is clear from the foregoing that the fact of employment by a party involved in a dispute does not prevent an individual from acting as an expert on behalf of that party. However, the expert must be aware that his overriding duty is to the Court, he must be aware of any applicable rules and Practice Directions (which must also be complied with) and he must acknowledge an understanding of their requirements, he must declare and explain in his report every aspect of his involvement and he must

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1 Paragraph 963 of the judgment
2 Supreme Court Rules 1987, Supreme Court of South Australia Practice Direction 46A ‘Guidelines for Expert Witnesses in Proceedings in the Supreme Court of South Australia’
3 Paragraph 901 of the judgment
4 Paragraph 967 of the judgment
be prepared, when giving his oral evidence, to make concessions where it is appropriate to do so even if they are damaging to his employer’s case.

The parties also appointed programming experts (Mr Lynas of Tracey, Brunstrom & Hammond for Alstom and Mr King of King Planning for YDRML) who both carried out an analysis of the delays that had occurred but using different methodologies. Quite apart from the difficulties of understanding and sorting out the methodologies (which is considered further below) the judge also had to address the issues of the qualification and independence of the experts and the assumptions they were asked to make.

Both were experienced programmers. The judge noted that most of Mr Lynas’ work had been on the forensic analysis of delay claims (and it was specifically noted that Mr Lynas had never prepared a works programme in connection with a power station) whereas Mr King’s experience had been in the preparation of programmes for many large-scale construction projects as well as in the analysis of delay in many more. Although it was not stated in the judgment the clear inference was that Mr King was better qualified. Mr Lynas also had another problem in that his independence was considered to have been compromised by the fact that his company had supplied a number of programming staff to Alstom during the currency of the works. The judge was in no doubt that Mr Lynas had an obvious interest in justifying the quality of the work carried out by his company’s employees (albeit that they may have been operating under the control and direction of Alstom) and that this would have affected the opinions given by Mr Lynas. Mr King, having had no prior involvement, had no such difficulty. 1-0 to Mr King.

The experts had both been instructed to act on a number of assumptions. Most of those on which Mr Lynas was instructed did not accord with the judge’s findings whereas those on which Mr King was instructed were more limited, accorded with the judge’s findings, and were predominantly on matters of little or no factual dispute. 2-0 to Mr King.

On the matter of methodology one of the principal considerations was the adequacy (or otherwise) of Alstom’s programmes to sustain the approach adopted by Mr Lynas. Mr Lynas, obviously, maintained that the programmes were adequate whereas Mr King, in the judge’s words, ‘...explained many and substantial reasons why they were not.’5 3-0 to Mr King.

Mr Lynas relied primarily upon a ‘Windows’ analysis utilising Alstom’s monthly programmes. It was criticised by the judge as being ‘...theoretical and subjective with little or no reference to contemporaneous materials...which might be used to verify the results of his Windows Analysis’6. Mr

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5 Paragraph 1254 of the judgment
6 Paragraph 1260 of the judgment
King relied extensively on contemporaneous material and his opinions ‘...were therefore grounded on fact rather than more abstract theory’. 4-0 to Mr King.

A further ‘own goal’ was scored by Mr Lynas in that his analysis of delay to Alstom did not consider delay to YDRML (i.e. possible concurrent delay). Mr Lynas’ position was that he had been instructed only to consider delay to Alstom and the judge said that an inquiry on that basis was ‘...entirely pointless...’. 5-0 to Mr King.

The judge also commented on the fact that Mr Lynas had been assisted by others in the preparation of his report; a Mr Ash apparently conducted the analyses but was not called to give oral evidence, whereas Mr King appeared to have analysed and completed the whole of his report himself. The judge clearly considered this to be relevant otherwise he would not have recorded the comment. 6-0 to Mr King.

Concern was also expressed by the judge that Mr Lynas either did not, or was not permitted to discharge his responsibility as an expert. The example cited was that Mr Lynas had assumed that Alstom’s programmes contained YDRML programmes (and presumably they were therefore consistent). Mr King, on the other hand, studied both sets of programmes in detail and was able to highlight substantial differences between them that pointed to the unreliability of the Alstom programmes as a basis of delay analysis (such as was carried out by Mr Lynas). 7-0 to Mr King.

### Appropriateness of Delay Analysis Methodologies

The final difficulty for Mr Lynas concerned the selection and application of his delay analysis methodologies. There were two parts of the works to consider; ‘Mechanical Completion’ for Stages 1 and 2, and ‘Provisional Acceptance and Acceptance’. For ‘Mechanical Completion’ Mr Lynas used something called Resource Analysis, and for ‘Provisional Acceptance and Acceptance’ he used a Windows Analysis. The Resource Analysis was used because the separate Alstom and YDRML mechanical completion milestones in the Alstom works programme were not linked by logic which meant that a critical path could not be identified. The method relies on an allocation of resource units to planned and actual programme activities on the basis of one unit per day of duration (regardless of the type or content of the work) and then compares the ‘planned’ resource units with the ‘actual’. The method was rejected by the judge for a number of reasons. First and foremost, it is not an accepted method (it does not feature in the SCL Protocol and is not mentioned in any of the standard texts such as Keith Pickavance’s *Delay and Disruption in Construction Contracts*) and appeared to the judge to have been invented by Mr Lynas to suit his argument. Secondly, the

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7 Paragraph 1262 of the judgment
8 The Society of Construction Law Delay and Disruption Protocol, October 2002.
‘planned’ and ‘actual’ programmes used by Mr Lynas were different – Mr King pointed out that for the method to have credence it would have been necessary to compare like with like; and finally, the process of allocation of one resource unit per day of activity duration, in the words of the learned judge ‘...distorts the picture of resources actually applied by YDRM’\(^\text{10}\). For example, two activities with the same duration of, say, twenty days would have the same application of resource (i.e. twenty units) despite the fact that one might actually require a resource of one man whereas the other might require ten men. The inaccuracy that would result from such disparity is obvious.

When it came to Mr Lynas’ Windows analysis it was accepted, by both the judge and Mr King, that it was a valid method but it was not accepted (by either) that the Alstom programmes on which it was based were adequate for the purpose. The final criticism however, was that notwithstanding the lack of acceptance of the programmes on which it was based the analysis itself did not even justify Mr Lynas’ conclusions with regard to delay. Mr King argued that the critical path resulting from the analysis was not correct - and Mr Lynas agreed!

Mr King’s own analysis was done using an ‘As-planned versus as-built’ analysis - and the judge liked it. It was acknowledged (by Mr King himself) that the method has limitations but in the absence of the appropriate programmes upon which to base anything more robust, such as the Windows analysis attempted by Mr Lynas, it was deemed to be acceptable, particularly since it was at least based on facts. In cross-examination, Mr King accepted that it would have been preferable to perform a prospective analysis, and reference was made to the SCL Protocol, which says that ‘...the adjudicator, judge or arbitrator (and presumably the expert) should so far as is practicable put him/herself in the position of the CA at the time the Employer Risk Event occurred’\(^\text{11}\) – in other words he/she should perform a prospective analysis. However, Mr King’s evidence was that it was simply not practicable (due to the deficiencies in the Alstom programmes) - and that was accepted by the judge.

In his conclusion the judge rejected Mr Lynas’ analyses because one of them (the Resource Analysis) was not an accepted method and had no supporting authority, and because the other (the Windows Analysis) was based on deficient programmes and did not support Mr Lynas’ own conclusions. On the other hand, Mr King’s analysis was readily accepted because, in the judge’s own words, it was ‘...the only practical way of ascertaining the reasons for delay in the circumstances of this case...’\(^\text{12}\)

There are a number of interesting lessons in this case for those of us who practice as experts in delay analysis. Firstly, it would seem unwise to depart from the ‘big four’ standard methodologies (at least as far as Australian judges are concerned!), and if you do then make sure your methodology is robust, reliable, accurate, properly explained and, ideally, has some other authority. Secondly, if you

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\(^{10}\) Paragraph 1288 of the judgement  
\(^{11}\) SCL Protocol, Guidance Section 4 at 4.19  
\(^{12}\) Paragraph 1325 of the judgment
do use a prospective analysis, it needs to be based on contemporaneous programmes that are
themselves robust and reliable (remember – garbage in, garbage out). Thirdly, and fairly
fundamentally, it helps if your analysis supports your conclusions; and finally, the use of a notionally
‘preferred’ methodology does not make the resulting analysis any more reliable. Although the SCL
Protocol seems to rank the four main methodologies in an order of preference with ‘As-planned
versus as-built’ at the bottom and ‘Time Impact’, or ‘Windows’, analysis at the top, the former, if
done properly and thoroughly, is still preferable to the latter badly done.