Delay in Start Up Insurance
Understanding & Controlling Risk

Marine & Energy Insurance Conference
Houston

Monday September 17, 2018

Main Principles of DSU

- DSU is purchased by the Project Owner – not the Contractor
- Only the Project Owner can make a claim under the policy
- Although it is called **Delay** in Start Up – not all delay is covered
- Delay must be caused by Damage covered by the policy
- There can ultimately only be one claim – and this generally is made at the end of a project – especially significant where there are separate CAR/Builder's Risk and Marine Cargo policies in place

What are some headline problems with DSU?

- Complex insurance product & getting more complex – needs to be handled correctly
- Historically it has been poorly understood by those trying to administer it
- Claims management suffers from the lack of relevant information – especially schedules
- Mutual benefits not explained by DSU owners - engage with Contractors to make them part of the process
- Identifying delays that are covered by the policy
- Growing frequency – more claims coming into the market

How to analyse the delay caused by an insurable event to a Project that has DSU coverage

What is DSU Delay?

Delay Calculation is the difference between two dates:

Actual Business Commencement Date (ABCD)
What the Insured actually achieved

Scheduled Business Commencement Date (SBCD)
What the Insured would have achieved ***"but for"*** the damage

Period of Delay = ABCD minus SBCD

DSU entitlement can only be forecast until the ABCD has been achieved.

Remember - can only determine final delay once the project has completed

Establishing the Actual Impact of an Incident

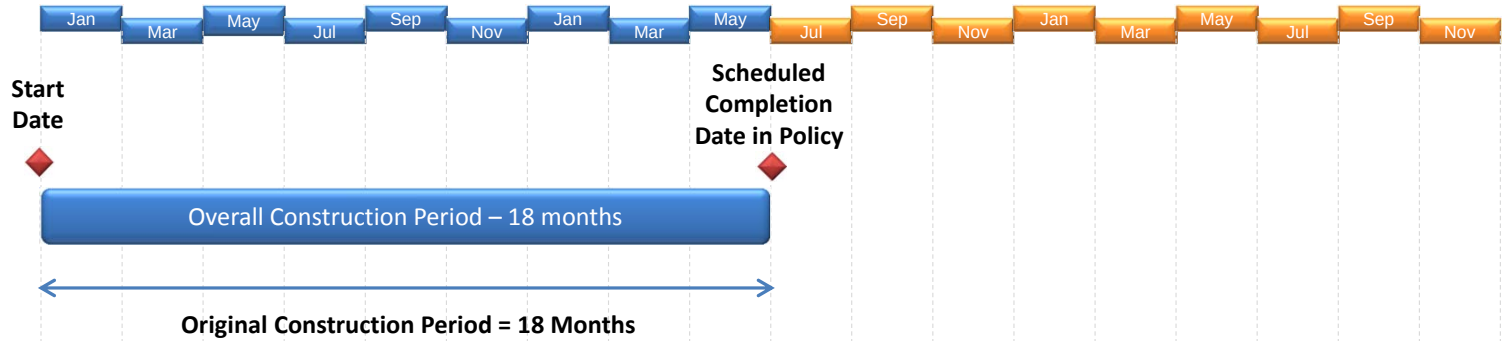
Need to review, assess and analyse schedules, project records, progress reports, etc:-

- When would the insured have commenced commercial operation “but for” the incident?
- What was the impact of any uninsured delays?
- What was the impact of any concurrent delays? Marine Cargo –v- Construction
- Did the insured exercise Due Diligence and Dispatch during the repair works?

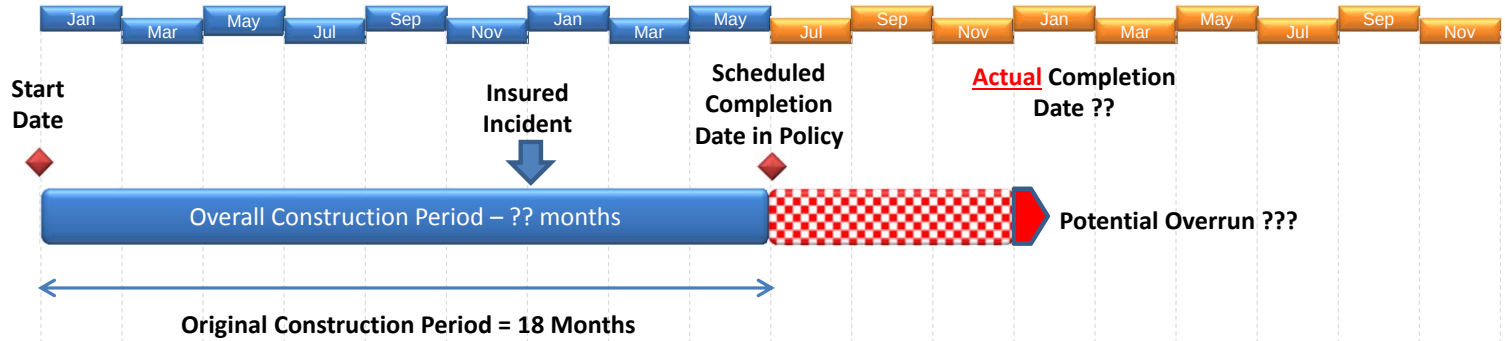
Why determining ‘Delay’ is important – calculating delay is not necessarily easy

- Not all delay is the same
- Not all delay is covered
- Different delays can run at the same time (Concurrent Delay)
- Not all delay is declared
- Causes of delay can change
- Not all delay is critical

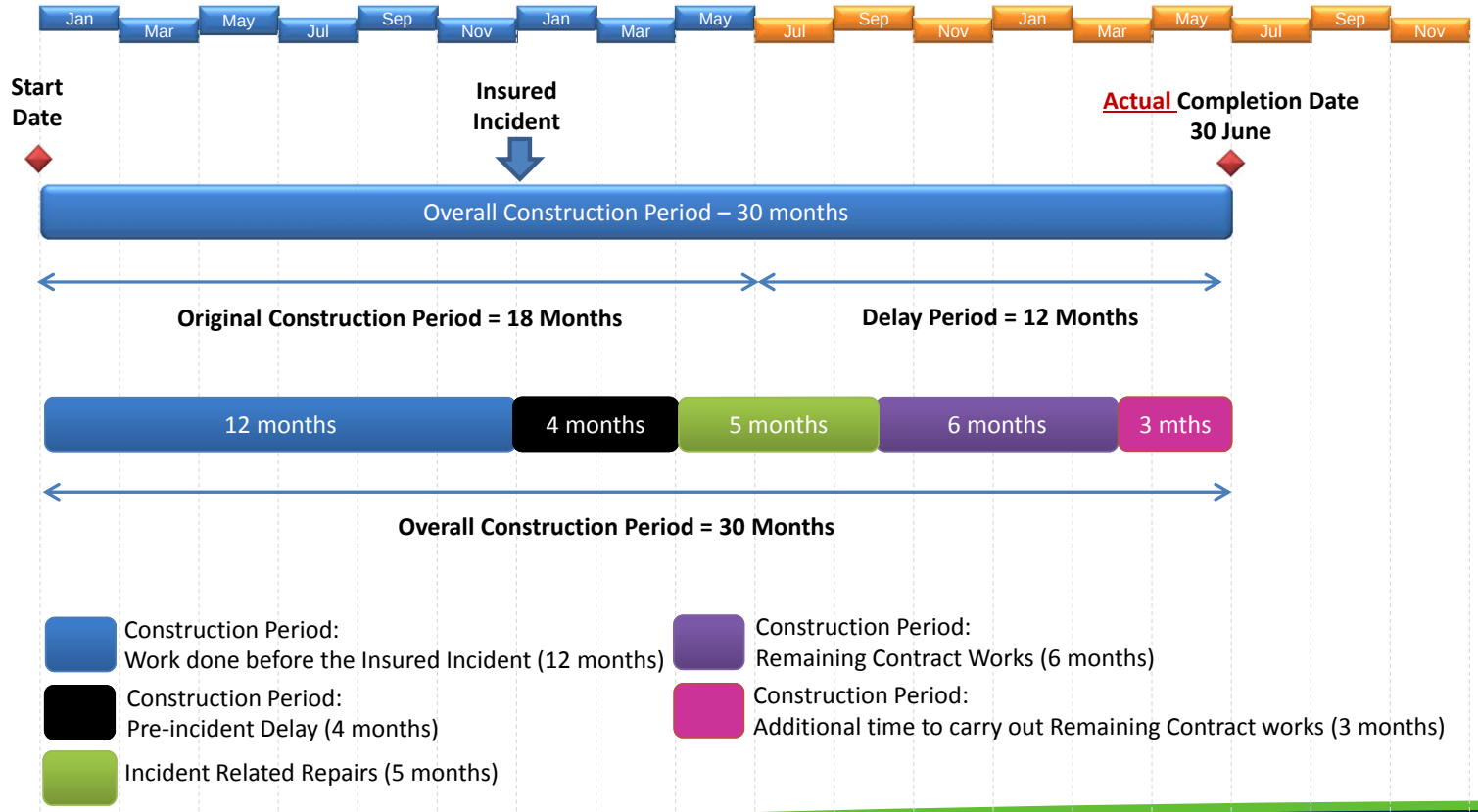
What does a DSU claim look like?
What is shown in the policy



What does a DSU claim look like?
Evaluating the claim event



What does a DSU claim look like?
How is the overall period made up



Construction Period:
Work done before the Insured Incident (12 months)

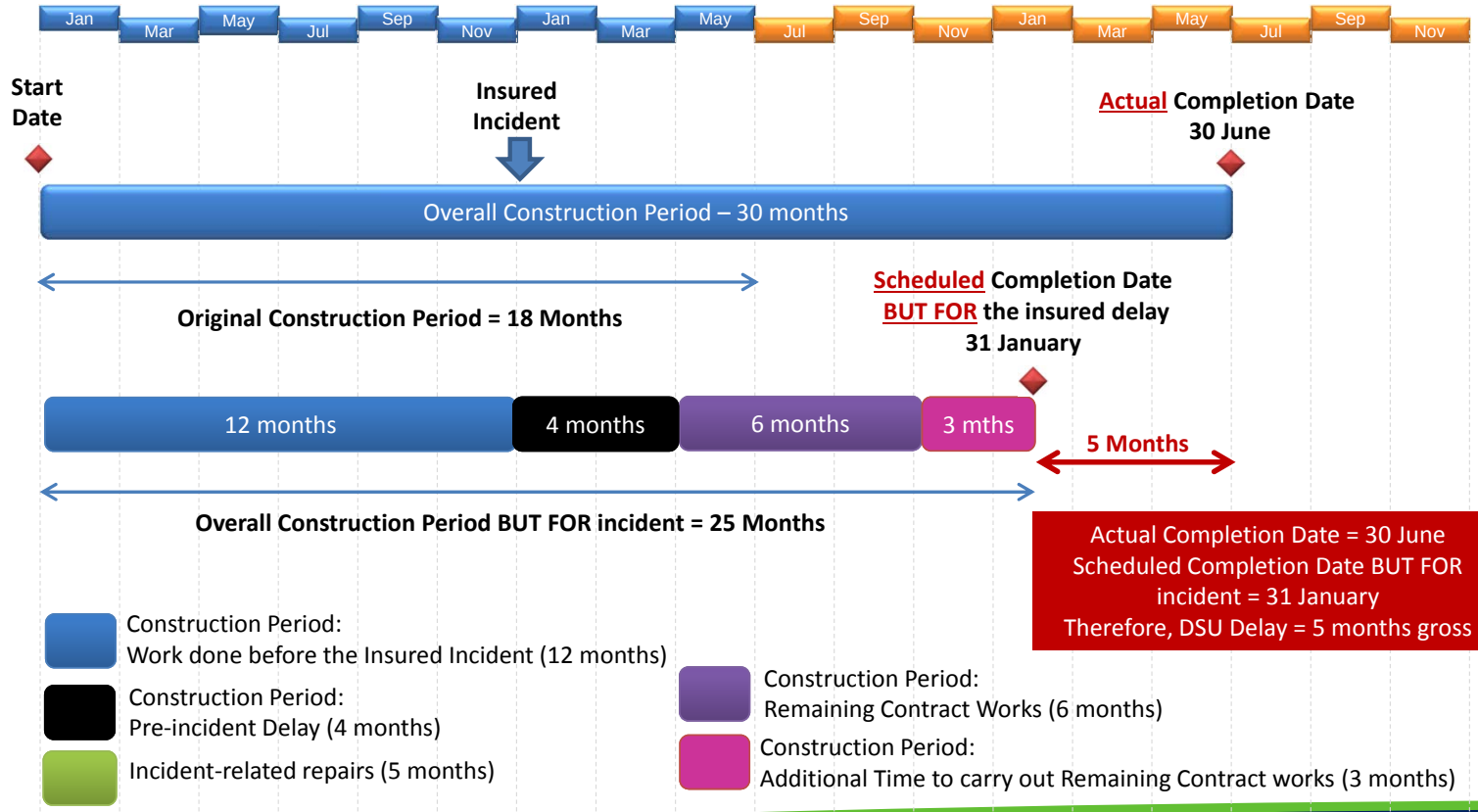
Construction Period:
Pre-incident Delay (4 months)

Incident Related Repairs (5 months)

Construction Period:
Remaining Contract Works (6 months)

Construction Period:
Additional time to carry out Remaining Contract works (3 months)

What does a DSU claim look like?
What is the DSU period



Other DSU Time Features

- Defect Rectification/Upgrade/Improvement Works
  - LEG 2/96, LEG 3/06
  - DE3, DE4, DE5
- Policy Specific Exclusions (e.g. authority shutdowns)
- Increased Cost of Working (ICOW) and Expediting Expenses
- Float Ownership
- Extensions of Time & Liquidated Damages

The Case for Project Monitoring

Why are DSU claims so hard?

- Lack of understanding
- Lack of information
- Wrong sort of information
    - Outdated Progress Reports
    - High level Gantt chart summaries in PDF
    - Anecdotal updates
- How do you get the correct information? **Project Monitoring**

What is Project Monitoring?

- Receiving native software schedules from the outset & then monthly updates in the native software – Primavera, Asta, etc
- Reviewing Progress Reports & site records where available
- Visiting site - can be beneficial, but not essential
- Liaise with Risk Engineers – can assist with data validation

This does not have to be an additional burden to the Contractor

P.S. Don’t confuse Project Monitoring with Project ‘Checking’

How to undertake Project Monitoring

It does not need to be onerous and does not have to be an additional burden to the Contractor

Receive Schedules	Receive Schedules from the outset and then monthly updates in native software e.g. Primavera, Asta etc.	Enables quick, effective and accurate interrogation of schedules using appropriate software
Review Progress	Review site progress reports and records where available	Compare with schedules; contains other validating data
Visit Site	Visiting site can be beneficial	But not essential
Validate Data	Liaising with Risk Engineers can assist with data validation	Only specific areas will require investigation – fact driven

Culminates in regular Monitoring Reports

What should monitoring reports contain

- Key project schedule data – retained for records
- Analysis of key dates/milestones
- Independently report the progress of the project
- Record project delays and their impacts
- Review risks and mitigation
- Advise on any changes to the Scheduled Business Completion Date (SBCD)

Capital Consulting International

Project Monitoring

Project Name : | **Policy Reference :** | **Lead Insurer :**

Report Date : | **Report Reference :** | **Client Contact :**

Key Information

Schedule Format	Primavera.xer
Schedule Reference	EPC_20130605
Schedule Data date	31-May-2013
Policy BCD	30-Jun-2013
Scheduled BCD	28-Oct-2013
Potential Delay [days]	120
Monitoring Commenced	01-Sep-2012
Monitoring Duration	12 months

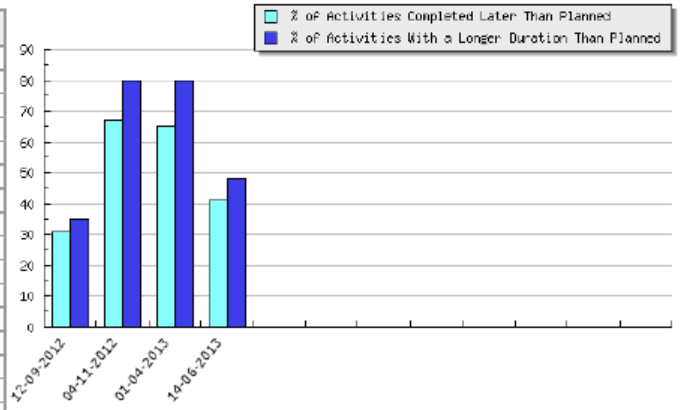
Period: 01-Mar-2013 to 31-May-2013

Completed Earlier Than Planned	Completed Later Than Planned	Longer Duration Than Planned	Shorter Duration Than Planned	Completed On Schedule	Started Earlier Than Planned	Started Later Than Planned	Baseline V Actual	Total Activities	Negative Float	No of Critical Activities
149	362	420	85	364	22	2	1	1,058	32	35
17%	41%	48%	10%	42%	26%	2%	0%	2%	35%	38%

Period: Start of Project to 31-May-2013

Completed Earlier Than Planned	Completed Later Than Planned	Longer Duration Than Planned	Shorter Duration Than Planned	Completed On Schedule	Started Earlier Than Planned	Started Later Than Planned	Baseline V Actual	Total Activities	Negative Float	No of Critical Activities
672	1,464	1,720	383	1,169	22	2	1	3,571	32	35
20%	44%	52%	12%	35%	26%	2%	0%	8%	35%	38%

Milestone Activity Name	30-08-2012	25-10-2012	28-02-2013	31-05-2013
	BASELINE	UPDATE 1	UPDATE 3	UPDATE 3
Handover to Comm - Unit 10 Oxidation	01-12-2012	03-12-2012	06-01-2013	06-01-2013
Handover to Comm - Unit 10 Tox Start Up	19-12-2012	20-12-2012	06-03-2013	14-03-2013
Handover to Comm - Unit 10 Reactor Water Run	02-01-2013	02-01-2013	10-03-2013	19-03-2013
Handover to Comm - Unit 10 Oxidation Water Run	15-01-2013	14-01-2013	26-03-2013	07-04-2013
Handover to Comm - Unit 11 Separation	18-02-2013	18-02-2013	23-04-2013	21-05-2013
Handover to Comm - Unit 12 TGAA	10-03-2013	11-03-2013	08-05-2013	04-05-2013
Handover to Comm - Unit 13 GAA	03-03-2013	03-03-2013	25-04-2013	29-05-2013
Handover to Comm - Unit 14 BA	25-02-2013	25-02-2013	25-04-2013	10-06-2013
Handover to Comm - Unit 16 Inhibitor	12-02-2013	12-02-2013	23-04-2013	27-05-2013
Handover to Comm - Unit 17 ARU	16-01-2013	17-01-2013	29-04-2013	16-06-2013
Handover to Comm - Unit 18 WWTU	14-01-2013	07-02-2013	11-04-2013	10-06-2013
Handover to Comm - Unit 26 Port	09-02-2013	09-02-2013	17-04-2013	10-06-2013
UPS Ready For Operation	12-09-2012	05-11-2012	05-11-2012	05-11-2012
Ready For Start Up	27-03-2013	27-03-2013	31-05-2013	19-06-2013
Mechanical Completion	27-03-2013	27-03-2013	31-05-2013	30-06-2013



Level of Confidence in Achieving Scheduled BCD

Mechanical Completion 30/06/13?? + 120 performance testing. The performance monitoring of 120 days has not been included in the programme and is require for achieving commercial operations

Benefits to the claims process

- Establish and agree any pre-incident delay
- Build a clear picture of what happened and when it happened
- Review the value of mitigation measures
- Separate insured and uninsured delays
- Identify concurrent events
- Assess the impact of any upgrades/betterment
- Establish the “But For the incident” scenario
- **Does all of the above – <u>quickly and collaboratively</u>**

Potential Benefits For All Parties

- Secure immediate access to all historical project records – irrespective of current relationships
- Correct delay periods can be discussed at an early stage – management of expectations and assessment of mitigation measures
- Increased likelihood of insurance coverage responding efficiently & correctly – who pays?
- A less protracted claims process – information is readily available – claim settled earlier
- Facilitates early agreement to proposed mitigation/acceleration, thereby giving the Contractor confidence in receiving payment
- Dispute avoidance
- A better overall claims experience

Obtaining the Required Information

Suggested Policy Clause:

DSU Project Monitoring

Endorsement

It is agreed and understood that otherwise subject to the terms, exclusions, provisions and conditions contained in the Policy or endorsed thereon, the Insured shall submit to the Insurer or the Insurer's nominated representative:

- at the inception of the Policy, the Construction Schedule(s) in Native File Format;
- each and every month, the contemporaneous Construction Schedule(s) updated with progress of and changes to the insured works in Native File Format; and
- each and every month, the contemporaneous Progress Report(s) and meeting minutes documenting and recording the progress, planning and scheduling of the insured works.

Definitions

Native File Format

The data file from the computer program used to produce and update the Construction Schedule, containing all logic links and interdependencies between activities. For example Microsoft Project (.mpp), Primavera (.xer), Asta Powerproject (.pp). It is further understood that electronic computer files in Portable Document Format (.pdf) are not considered Native File Format.

Construction Schedule

The programme used to forecast the completion date of the insured project and to plan and organise all the activities, materials, resources and works insured.

Case Study - Supercritical Thermal Power Plant

- The project was an EPC contract for a 900MW thermal power plant in the US, consisting of a supercritical pulverised coal-fired steam generator & a single steam turbine and generator

- The plant was being constructed by a Joint Venture consortium between 3 contractors in North America
- The main boiler was designed & fabricated in Japan

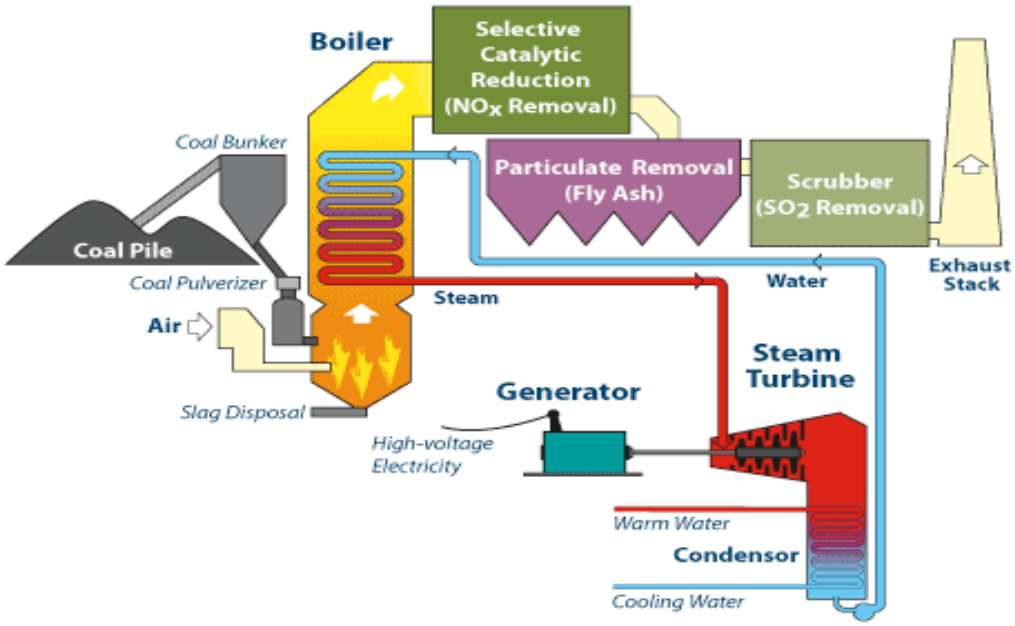
Key Issues:-

- **Determining Pre-Incident Status**
- **Analysing Acceleration & Mitigation Measures**

Outlining the Problem

- Overheating caused damage to the boiler section of the plant
- Boiler was a large structure, approximately 50m x 50m x 100m high
- Made up of special alloy hollow tubes welded together in panel sections
- Damage was not total – only certain panel sections needed replacement
- Alloy tubes & boiler panel sections could only be fabricated in Japan

Schematic


Boiler
Selective Catalytic Reduction (NO_X Removal)
Coal Bunker
Particulate Removal (Fly Ash)
Scrubber (SO_2 Removal)
Exhaust Stack
Coal Pile
Coal Pulverizer
Water
Steam
Air
Steam Turbine
Generator
Slag Disposal
High-voltage Electricity
Warm Water
Condensor
Cooling Water

Boiler Panel Sections

Boiler water wall fabrication

Initial Economic Test

- At the time of the incident occurred, the project was being reported as 7.5 months from ‘Substantially Complete’
- No monitoring had been carried out & no schedules were available
- A rebuild diagram forecast a repair period of 12 months
- Completion Date based on using the original transportation for materials – all sea freight. This had a transportation cost of $6m
- An accelerated schedule was also presented, based on the use of air freight. This was forecast to achieve a 45 day saving to the repair period at a transportation cost of $24m - i.e. $18m extra over
- This raised the question *‘Does the expenditure of $18m to save an apparent 45 days represent good value for Insurers?’*

Initial Situation - No Soft Copy Schedules Available

- **Contractor claimed project was 'on-schedule' for Completion** – although there were stories of late deliveries & weather shut-outs - no data to refute end date
- **Post-incident delay period** – based on waiting for all panel sections to be available to fit on site – sea-freight only
- **All panels air-freighted** – without schedules it was not possible to determine what panels were critical – all treated as critical by the contractor
- **45 day saving** – with no schedule to analyse there was no way to verify this
- **Therefore – there was no way to verify the Cost v Time analysis without proper scheduling information**

Without information to verify, Insurers could not agree & sanction Mitigation

DSU Delay & Mitigation - As Presented

Initial assessment based on no scheduling information

- All replacement components deemed critical & required on site prior to starting boiler repair
- Additional cost of 20 air-lifts = spend $18m ($0.9m)/airlift)
- 45 day saving of DSU = $22.5m
- Overall saving = **$4.5m** was this a *"good deal"*?

Schedules Made Available – Analysis Undertaken

- **Contractor claimed project was 'on-schedule' for Completion** – actual analysis of the pre-incident schedule showed that the project was 2 weeks in delay – needed to be taken into account in delay analysis
- **Repair Period** – analysis of the schedules showed this period to be realistic, but did not need all panels to be on site before construction could begin – a phased delivery was more appropriate
- **Air-freighting all panels** – only the critical panels needed to be air-freighted – approximately 60% of the panels could go by sea. Only 8 airlifts actually required
- **45 day saving** – schedule analysis showed a 56 day saving was actually achievable & 45 days allowed contingency

DSU Delay & Mitigation - As Analyzed

Actual assessment with scheduling analysis

- Sequencing critical components – not all required to start on site
- Sea freight for non-critical components
- Additional cost of 8 air-lifts = $7.2m
- 56 day saving of DSU = $28m
- Overall saving **=$20.8m**

Positive Outcome

- Confidence in analysis meant early agreement could be reached by Insurers
- Contractor had assurances that acceleration payments would be made
- Increase in time saving = saving in Contractor's Liquidated Damages
- Transparency = Collaboration

Why is Project Monitoring Important?

- DSU is a popular insurance product & is widely available
- Project Monitoring carried out correctly provides an independent assessment of progress
- If used properly can facilitate a collaborative approach between all parties
- It is the key to unlocking other payments from other sections of the insurance policy that the contractor can participate in
- In the event of a claim, the benefits of having implemented an effective monitoring system are huge & provides benefits for all parties

The Future of DSU & Project Monitoring

According to a recent Sigma publication (Swiss Re Institute) the future looks like this:-

- Global construction output is forecast to grow over 7% p.a. over the next 10 years
- Global investment in infrastructure, power generation & telecoms structures will hit US$79 trillion between 2016 & 2040
- Governments in advanced countries have announced policies promising major investment in deteriorating infrastructure
- DSU will figure in more and more construction projects
- *“in a digitally-connected world, insurance may come to play more of a risk avoidance/mitigation role, rather than solely indemnifying losses”*

Capital Consulting International

Timeline Forensics

Reinstatement Support Management

Project Monitoring

Cost Analysis & Management

LONDON SINGAPORE NEW YORK HOUSTON CHICAGO MIAMI

Questions