

CONSTRUCTION CPM CONFERENCE MOCK TRIAL PRESENTATION

2019 San Diego CA – our ninth Conference – 23rd Trial

Featuring:

Hon. John McClellan Marshall

Jeffrey Kirzner of JonesDay

Keith Bergeron of DeutschKerrigan

Henning Roedel, PhD of Alice

Fredric L Plotnick, PhD, Esq., P.E.

A Recipe for Forensic Analysis
You Can Get Everything That You Want
with ALICE



THE PROJECT

- 18 mile transmission line – 128 separate Tower sites
- Contractor determines sequence/schedule but must reach substantial completion for entire project within 730 calendar days
- Owner entitled to liquidated damages for unexcused delays of \$80,000 per day
- Environmental Mitigation Measures limit access to certain sites and may restrict or interrupt work during project

CONTRACTOR'S RIGHT TO A TIME EXTENSION

- [Section 1.1] Contractor agrees that it can complete all required work within contract timeframes in accordance with Environmental Mitigation Measures
- [Section 1.2] Contractor is only entitled to additional time for “a change in law to the Environmental Mitigation Measures or delays caused by such measures that are not reasonably foreseeable and not within reasonable control of Contractor but only if and to the extent Contractor acts diligently and uses Reasonable Efforts to overcome, remove or mitigate the claimed delays, including resequencing the Work or taking all other steps that are reasonably practicable under the circumstances.”

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THE CLAIM

Contractor finishes project 250 days late

Contractor claims excusable delays and constructive acceleration

Contractor seeks damages of \$7,500,000

Owner claims delays are not excusable and demands liquidated damages

Owner seeks damages of \$20,000,000

Who wins? You decide

BATTLE OF THE EXPERTS – MAN VS MACHINE

Contractor's claim supported by traditional schedule analysis/testimony of contractor's expert Fredric L Plotnick, Ph.D., Esq., P.E. of EnProMaC

Owner's claim supported by new product of ALICE Technologies, and testimony of owner's expert, Henning Roedel, Ph.D.



THE WORK

6 step process for each site:

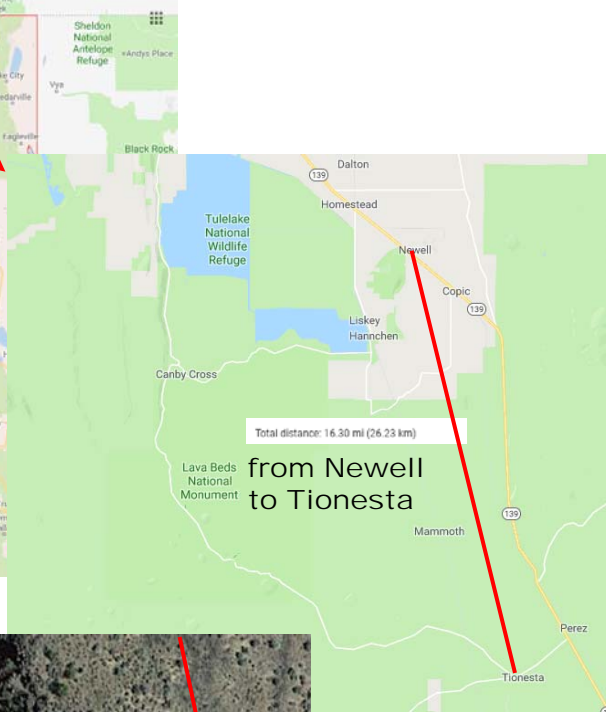
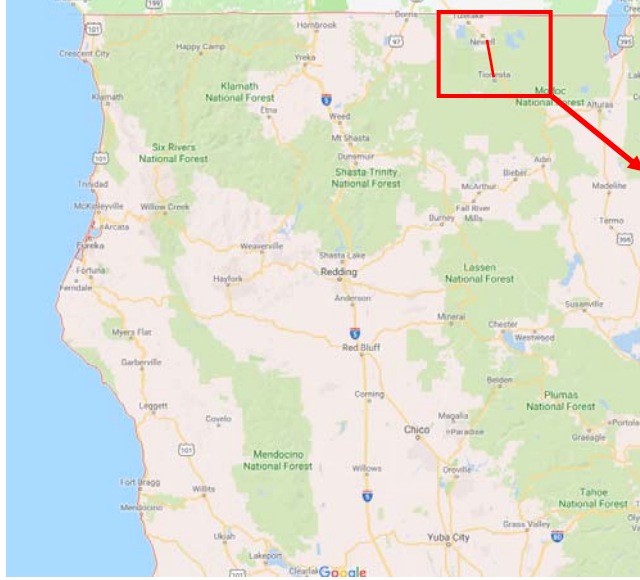
- Clear the site
- Complete the foundation
- Assembly of Tower
- Erection of Tower
- Site completion/clean up
- Flying in Sock Line and Pulling Conductor



THE ENVIRONMENTAL MITIGATION MEASURES

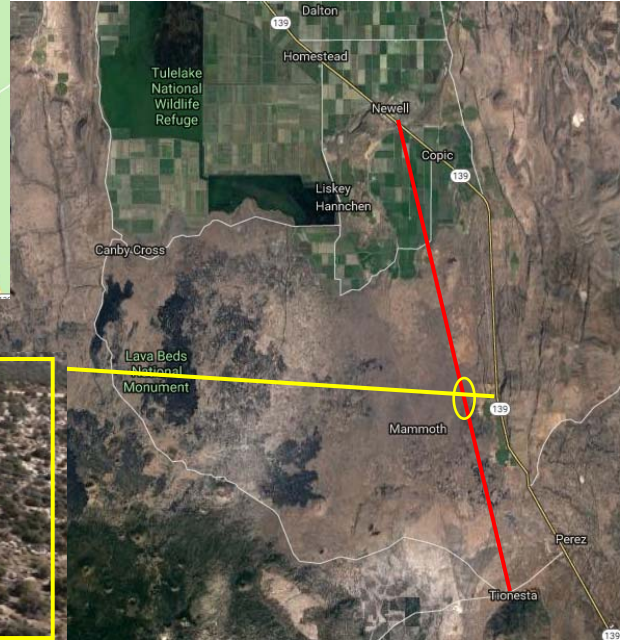
Contracts states that “Contractor shall comply in all respects with all Environmental Mitigation Measures relating to the Project, the Sites and the performance of the Work”

Exhibit A contains detailed environmental mitigation measures, including black out periods to protect Avian Species/Big Horn Sheep and other measures to protect nesting birds and other species



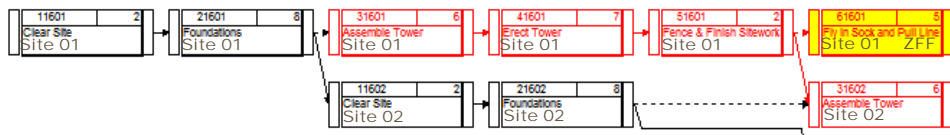
from Newell
to Tionesta

Total distance: 16.30 mi (26.23 km)



Developing the Plan & Schedule

- 128 towers - 4 zones - 4 concurrent crews
- each zone has 4 packages of 8 towers
- order of work w/i pkg 1.2.3.4.5.6.7.8 unless
 - environmental issue: perhaps 1.8.7.6.5..
- must minimize moving crew beyond package
- 7 environmental calendars - by zone/pkg
- 6 step process for each site:
 - clear - fdn - assemble - erect - cleanup - fly
- 2 sub-crews: clear-fdn, tower-cleanup

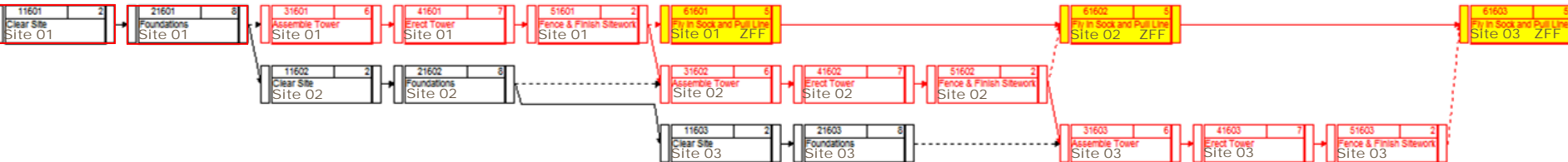
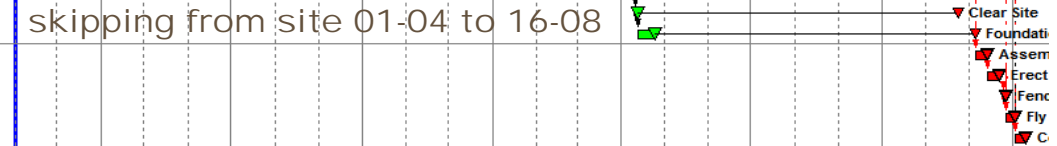


- may defer flying in conductor until all ready

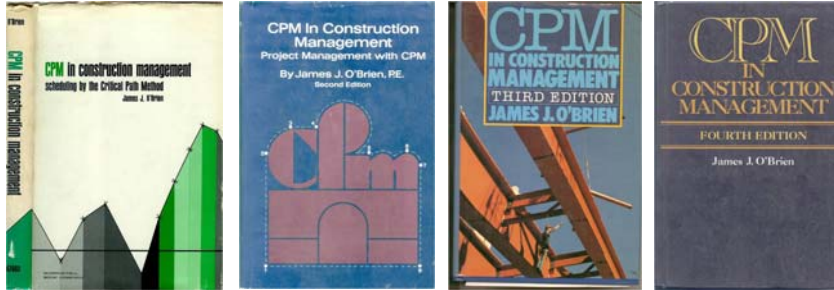


Activity ID	Activity Description	Orig Dur	Cal ID	WTYR	PKG	SITE	Early Start	Early Finish	Total Float	2016												2017												
										J	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN
10	Notice to Proceed		1	1	0	0	01FEB16	01FEB16	0	▼ Notice to Proceed Number of activities..... 770																								
10101	Clear Site		2	1	1	1	02FEB16	03FEB16	0	▼ Clear Site Number of activities in longest path.. 522																								
20101	Foundations		8	1	2	1	04FEB16	15FEB16	0	▼ Foundations Started activities..... 0																								
30101	Assemble Tower		6	1	3	1	16FEB16	23FEB16	0	▼ Assemble Tower Completed activities..... 0																								
40101	Erect Tower		7	1	4	1	24FEB16	03MAR16	0	▼ Erect Tower Number of relationships..... 1039																								
50101	Fence & Finish Sitework		2	1	5	1	04MAR16	07MAR16	0	▼ Fence & Finish Sitework																								
60101	Fly in Sock and Pull Line		5	1	6	1	24MAY17	30MAY17	0	▼ Fly in Sock and Pull Line Data date..... 01FEB16																								
10102	Clear Site		2	1	1	1	2	16FEB16	17FEB16	5	▼ Clear Site Start date..... 01FEB16																							
20102	Foundations		8	1	2	1	2	18FEB16	29FEB16	5	▼ Foundations Imposed finish date..... 09JAN18																							
30102	Assemble Tower		6	1	3	1	2	08MAR16	15MAR16	0	▼ Assemble Tower Latest calculated early finish.....																							
40102	Erect Tower		7	1	4	1	2	16MAR16	24MAR16	0	▼ Erect Tower																							
50102	Fence & Finish Sitework		2	1	5	1	2	25MAR16	28MAR16	0	▼ Fence & Finish Sitework																							
60102	Fly in Sock and Pull Line		5	1	6	1	2	31MAY17	06JUN17	0	▼ Fly in Sock and Pull Line																							
10103	Clear Site		2	1	1	1	3	01MAR16	02MAR16	10	▼ Clear Site																							
20103	Foundations		8	1	2	1	3	03MAR16	14MAR16	10	▼ Foundations																							
30103	Assemble Tower		6	1	3	1	3	29MAR16	05APR16	0	▼ Assemble Tower																							
40103	Erect Tower		7	1	4	1	3	06APR16	14APR16	0	▼ Erect Tower																							
50103	Fence & Finish Sitework		2	1	5	1	3	15APR16	18APR16	0	▼ Fence & Finish Sitework																							
60103	Fly in Sock and Pull Line		5	1	6	1	3	07JUN17	13JUN17	0	▼ Fly in Sock and Pull Line																							
10104	Clear Site		2	1	1	1	4	15MAR16	16MAR16	15	▼ Clear Site																							
20104	Foundations		8	1	2	1	4	17MAR16	28MAR16	15	▼ Foundations																							
30104	Assemble Tower		6	1	3	1	4	19APR16	26APR16	0	▼ Assemble Tower																							
40104	Erect Tower		7	1	4	1	4	27APR16	05MAY16	0	▼ Erect Tower																							
50104	Fence & Finish Sitework		2	1	5	1	4	06MAY16	09MAY16	0	▼ Fence & Finish Sitework																							
60104	Fly in Sock and Pull Line		5	1	6	1	4	14JUN17	20JUN17	0	▼ Fly in Sock and Pull Line																							
11608	Clear Site		2	1	1	16	8	11APR17	12APR17	161	▼ Clear Site																							
21608	Foundations		8	1	2	16	8	13APR17	24APR17	161	▼ Foundations																							
31608	Assemble Tower		6	1	3	16	8	06DEC17	13DEC17	0	▼ Assemble Tower																							
41608	Erect Tower		7	1	4	16	8	14DEC17	22DEC17	0	▼ Erect Tower																							
51608	Fence & Finish Sitework		2	1	5	16	8	25DEC17	26DEC17	0	▼ Fence & Finish Sitework																							
61608	Fly in Sock and Pull Line		5	1	6	16	8	27DEC17	02JAN18	0	▼ Fly in Sock and Pull Line																							
99990	Certify and Demobilize		5	1	0	0	0	03JAN18	09JAN18	0	▼ Certify and Demobilize																							

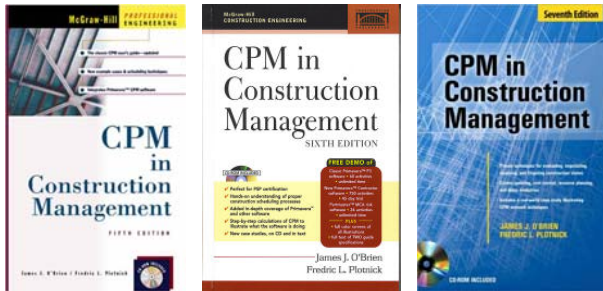
skipping from site 01-04 to 16-08



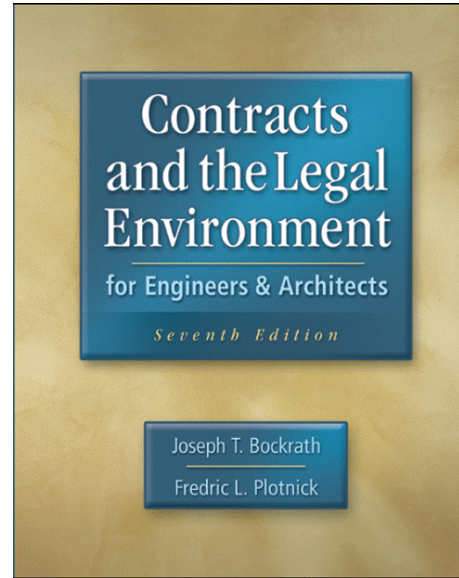
CONTRACTOR'S SCHEDULE ANALYSIS



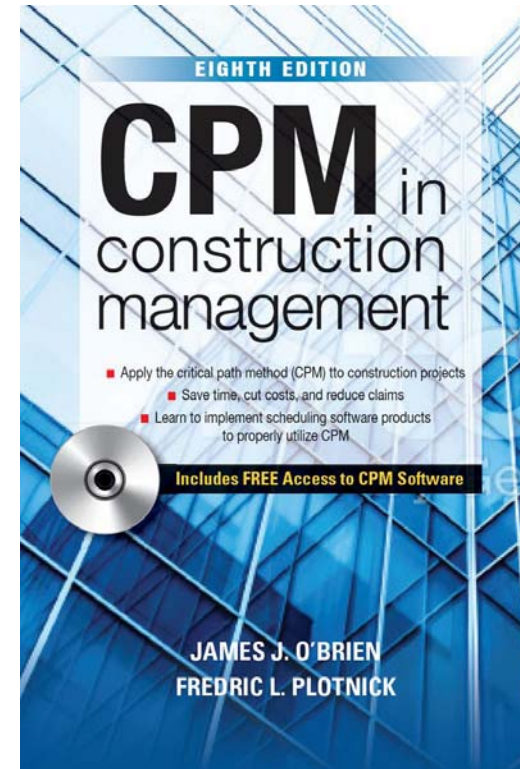
by James J. O'Brien, P.E., PMP



by James J. O'Brien, P.E., PMP, and
Fredric L. Plotnick, Ph.D., Esq., P.E.



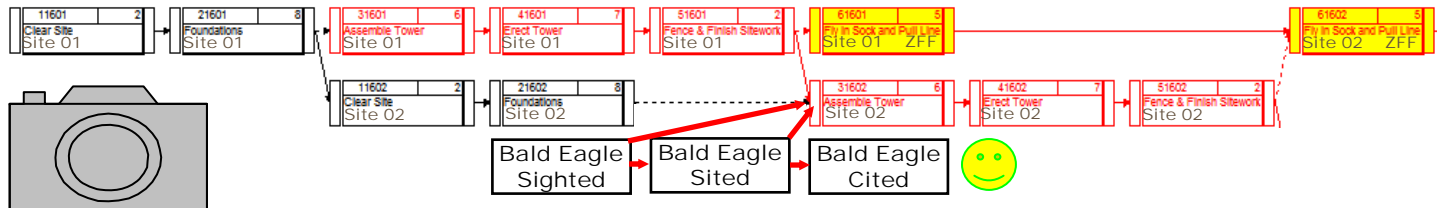
by Joseph T. Bockrath,
and Fredric L. Plotnick

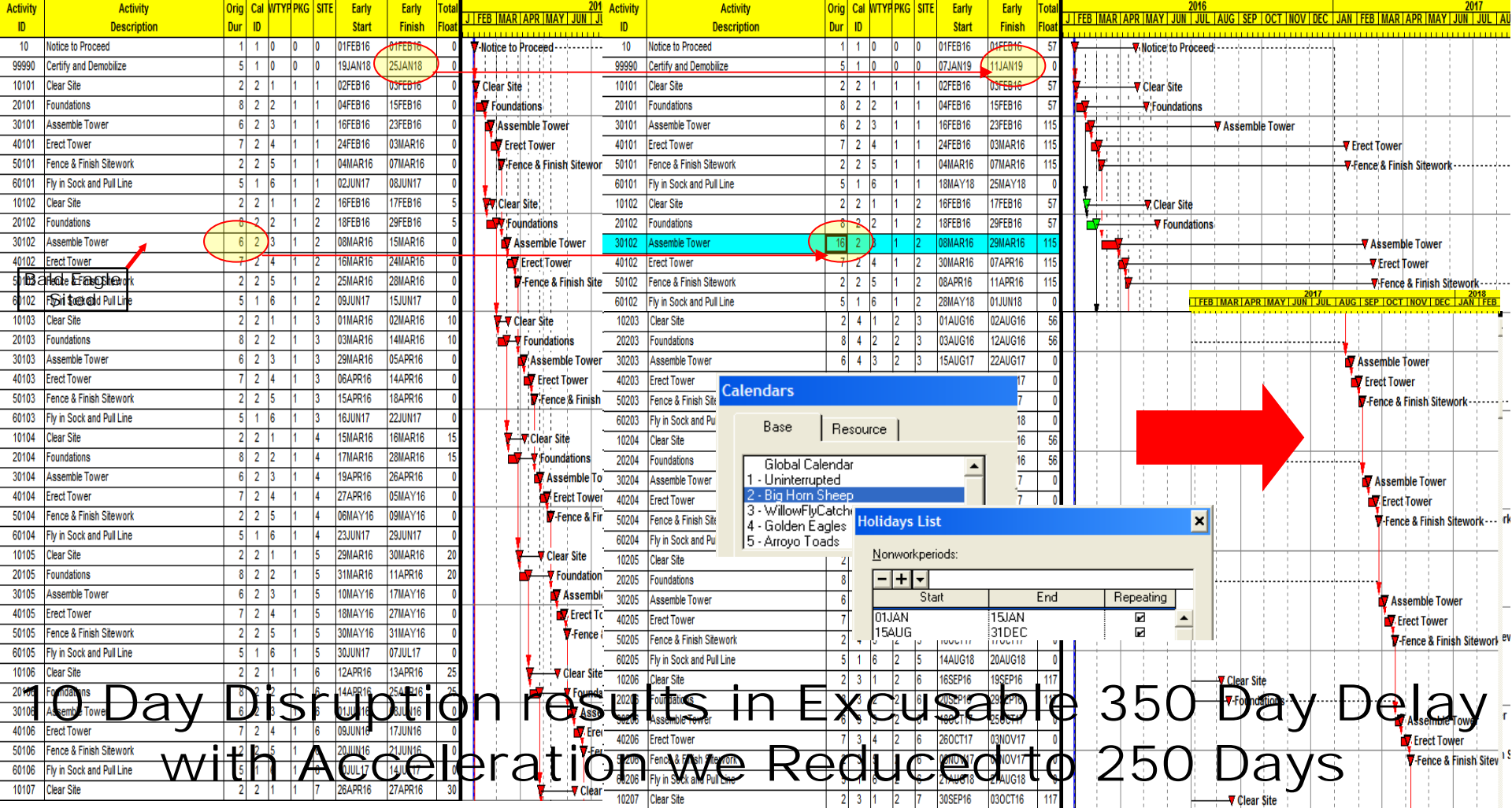


CONTRACTOR'S SCHEDULE ANALYSIS



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ISSUE ONE: IS THE NEW SCIENCE ADMISSIBLE?

- Voir Dire – gatekeeper function of the Court
- All About Henning – Frye
- All About ALICE – Daubert



OWNER'S SCHEDULE ANALYSIS



- 128 towers with two sub-crews is 256 work sites
- attempting every possible sequence may require more than 256,000,000 evaluations
- ALICE to the rescue
- moving the four double crews among the 128 sites results in completion in 698 days
moving the eight subcrews among the 256 sites (foundation then towers) in 652 days
- contractor had duty to resequencing the Work as reasonably practicable
- the costs to resequence are nominal (estimated at under \$100,000)
bonus for 60 day early completion would have been \$2,400,000
- contractor not entitled to extension of time nor non-helpful acceleration

OWNER'S CONCLUSIONS



- Contractor may be smart – but not as smart as [Artificial Intelligence] ALICE
- Making the intellectual effort to resequence shortened the job without overtime by not just 100 days – nor even 350 days – but by 400 days
- Contractor could have anticipated risk of additional environmental incidents
- Contractor should have used ALICE or other means at beginning of job
- Contractor should have used ALICE or other means when encountering eagle
- Contractor should have used ALICE or other means at each update
- Contractor should not be reimbursed for useless efforts to accelerate
- Contractor should not be granted extension of time and should pay \$20,000,000 L/D's

CLOSING ARGUMENTS

THE JURY VERDICT

- Contractor owed time extension but neither side recovers damages: Y/N?
- Contractor wins and gets \$_____
- Owner wins and gets \$_____