

**Time Entitlement/Concurrency Training Exercise
Roadway Project – South Africa**

Answers – Window No. 1

- Which activity (or group of activities) experienced delay? **Activity No. 1200 experienced the delay and activity IMP1 was inserted to track the delay until completion.**
- How much delay occurred? **There was 20 Days of delay in Window 1**
- Where did the delay occur (What was the driving activity)? **The delay occurred in original activity 1200 "Remove existing Mat'l to Subgrade."**
- What the overall delay was to the Practical Completion Date? **20 Calendar Days.**
- Who was responsible for the delay? **The Employer was responsible for the delay as a result of the differing site condition (ledge) was not identified within the Contract documents.**
- Was there a concurrent delay? If so, how much concurrent delay occurred? **With the exception of Activity 1200, the as-built durations indicate there was no increase from the baseline durations therefore there was no concurrent delay by the Contractor.**

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Answers – Window No. 2

- Which Activity (or group of activities) experienced the delay? **Contractor activities 1400 and 1500.**
- Where did the delay occur (What was the driving activity)? **The driving delay occurred in two parts. Part one was a result of activity 1400 "Install Roadway Drainage - East Side - 1000 M." where its completion did not meet the original 10 day duration developed by the contractor. The Part two delay was the result of adjusting and increasing the original duration for activity 1500 by 5 Days to represent the time period that was required by activity 1400 for completing similar work.**
- What the overall delay was to the Practical Completion Date? **22 calendar Days**
- Who was responsible for the delay? **The Contractor was responsible for the delay as a result of not meeting or performing to the durations found in the baseline programme.**
- Was there a concurrent delay? If so, how much concurrent delay occurred? **There was no concurrent delay as there was only one party responsible for the delay during the window and in this case, the delay was entirely the responsible of the contractor.**

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Answers – Window No. 3

- Which Activity (or group of activities) experienced the delay? **Activity Nos. IMP2-1, 2200, and 1500 were the activities experiencing delay within Window No. 3.**
- Where did the delay occur (What was the driving activity)? **The driving delay occurred in two phases where the late completion of Activity No. 1500 by the Contractor was the driving delay through 12 October 2006. The Phase 2 delay was the result of activity IMP2-1 with a duration of 25 Days and the increased duration (5 Days) to activity 2200 representing the delays to the completion of Landscaping Work on the east side of the roadway.**
- What was the overall delay to the Practical Completion Date? **The overall delay to Practical Completion was 8 calendar Days.**
- Who was responsible for the delay? **The employer was responsible for the delay due to design changes associated with the Landscaping Design Documents for the east side of the Roadway.**
- Was there a concurrent delay? If so, how much concurrent delay occurred? **No, there was no concurrent delay. It would appear there may have been a concurrent delay; however, the Employers delay had 15 days of free float before it would have become the driving delay.**

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Window No. 3 – Allocation of Responsibility Table

Window No.	Data Date	Original Completion Date	Modified Completion Date	Window Var. to Completion Date	Cumulative Var to, Completion date	Responsibility	
						Employer	Contractor
Accepted Baseline Programme	1-Jul-06	2-Nov-06					
Window No. 1 (Differing Condition - Reference Activity IMP1)	19-Jul-06		22-Nov-06	-20	-20	20	0
Window No. 2 (Contractor extended duration delay)	28-Aug-06		14-Dec-06	-22	-42	0	22
Window No. 3 (Contractor extended duration delay) (Employer initiated Design Change - Reference Activity IMP2)	2-Oct-06		22-Dec-06 20-Dec-06 22-Dec-06	-8 -6 -8	-50	8	6
Totals per Category =>						28	28

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Answers - Analysis Conclusion

- What was the overall delay by the Employer? ***The overall Employer delay was 28 Days as a result of delays in Window No. 1 (20 Days) and Window No. 3 (8 Days).***
- What was the overall delay by the Contractor? ***The overall Contractor delay was 28 Days as a result of delays in Window No. 2 (22 Days) and Window No. 3 (6 Days).***
- Was there a concurrent delay by the Contractor? ***If so, how much concurrent delay occurred? No, there was no concurrent delay by the Contractor.***
- Which Windows did the Concurrent delay occur in? ***The Contractor delay in Window No. 3 was the dominant delay beginning on 06 October 2006 and was completed on 12 October 2006. The delay was the result of an extended duration for completion of activity No. 1500 "Install Roadway Drainage - West Side - 1000 M."***

**Time Entitlement/Concurrency Training Exercise
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Answers - Analysis Conclusion (con't)

- Was the entire delay a critical path delay?
- ***For Window Nos. 1 and 2, the entire delay was a critical path delay as a result of the delayed activities falling onto the Longest Path (s) both in the baseline programme and Window Nos. 1 and 2.***
- ***However, at the beginning of Window No. 3, Landscaping Activity No. 2200 had 15 days of free float (see Snapshot No. 1).***
- ***The entire 15 days of free float where it had to be expended before the Landscaping path would become a critical path delay.***
- ***In this case, the Contractor delay was the critical path delay for the first six days of the window where Activity No. 1500 experienced an as-built delay equal to the six days of extended duration.***
- ***Following this period, the Contractor remained on plan through completion of its work.***

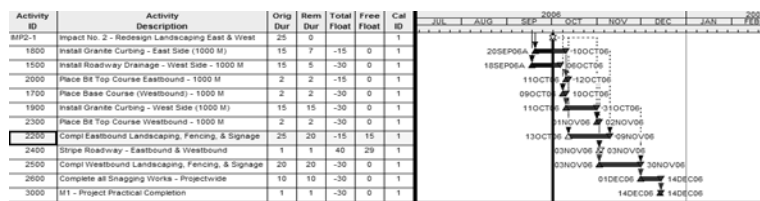
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Answers - Analysis Conclusion (con't)

- Was the entire delay a critical path delay?

In the case of the Employer, they would not have caused a critical path delay until after 06 December 2007 or on the 23rd day of the Activity 2200 the Total Float was equal for both the Employer and Contractor (see Snapshot No. 2).

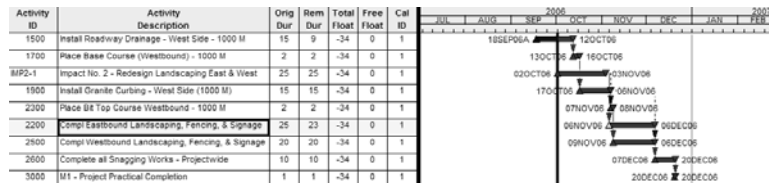
Snapshot No. 1



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Answers - Analysis Conclusion (con't)

Snapshot No. 2



**Time Entitlement/Concurrency Training Exercise
Roadway Project – South Africa**

Answers – Group Discussion

- The overall entitlement to the Contractor and why they Contractor are entitled to this time. ***The Contractor is entitled to 28 Days of entitlement as a result of Employer delays in Window Nos. 1 and 3. The Employer is not responsible for the delay in Window No. 2.***
- The overall concurrent delay by the Contractor and what caused the concurrent delay. ***The overall concurrent delay by the Contractor was 6 Days and occurred in Window No. 3.***
- The overall entitlement date to the Contractor. ***The Contractors entitlement date would be 30 November 2006. This is calculated by adding the 28 Days of Employer delay to the baseline Practical Completion date of 02 November 2006. The Employer would not award an extension of time for the whole delay (to 22 December 2006) to the Contractor unless they had been responsible for the delay in Window No. 2, which they were not.***

Logic and Calculations
Per the approved Clause 14 Programme

ACTIVITY		DURATION (cal days)	START			FINISH		
			Baseline Logic	Calculation	Date	Baseline Logic	Calculation	Date
A	Order to Commence	0			10-Dec-95			
B	Delivery of Main Equipment	131	Immediately upon start	B=A	10-Dec-95	add duration	start of B + dur	20-Apr-96
C	Arrival of Main Equipment	0				end of B	end of B	20-Apr-96
D	T.W. & Diversion Channel	176	First day after C ends	C end + 1	21-Apr-96	add duration	end of C + dur	13-Oct-96
E	Cofferdams	34	First day after D ends	D end + 1	14-Oct-96	add duration	end of D + dur	16-Nov-96
F	First River Diversion	0				end of E		16-Nov-96
G	Undersluices Excavation	103	Upon Diversion	F end	16-Nov-96	add duration	end of F + dur	27-Feb-97
H	Undersluices Cut-Off Wall	44	To start after 45 days of excavations	G start +45	31-Dec-96	add duration	H start + dur	12-Feb-97
I	Undersluices Concrete	318	First day after H ends	H end + 1	13-Feb-97	add duration	end of H + dur	27-Dec-97
J	Second River Diversion	0				After the Undersluices finished, 3 days of cofferdam works are required before diversion can be made	end of I + 4	31-Dec-97
K	Standard Bays Concrete	496	After Second River Diversion, 13 days of cofferdam works are required to protect the working area before these structures can start	J end +14	14-Jan-98	add duration	K start + dur	25-May-99
L	Fuse Plug Phase 1	272	Must start at the end of a high-flow season and when no more than 3 1/2 months are left before Second River Diversion to allow it to finish before the next high-flow season	End of 1997 high-flow season	16-Sep-97	Must be completely finished before the next high-flow season to enable overflow without damage to the structures	L start + dur	14-Jun-98
M	Fuse Plug Phase 2	272	Must begin at the start of the low-flow season in which the Standard Bays will be completed, so that the Standard Bays are used for overflow during the next high-flow season	End of 1998 high-flow season	16-Sep-98	Must be completely finished before the next high-flow season to avoid damage to the structures	M start + dur	15-Jun-99

Logic and Calculations
Per the approved Clause 14 Programme

ACTIVITY	DURATION (cal days)	START			FINISH		
		Baseline Logic	Calculation	Date	Baseline Logic	Calculation	Date
N Overflow through Standard Bays	0				After the Standard Bays are completed and before the high-flow season	after end of K	15-Jun-99
O Standard Bays Gates and M&E works	276	To start 420 cal days after the Standard Bays (when all piers are cast)	K start +420	10-Mar-99	add duration	O start + dur	11-Dec-99
P Control Building	245	To start 70 cal days after the Standard Bays M&E works	O start +70	19-May-99	add duration	P start + dur	19-Jan-00
Q Start of Impounding	0	Milestone highlighting the start of activity R below	One day after the latest of all predecessors	12-Dec-99			
R Impounding	90	First day after all Structures and the Fuse Plug are completed	One day after the latest of all predecessors	12-Dec-99	add duration	R start + dur	10-Mar-00
S Completion	0				End of Impounding and of all works	end of R	10-Mar-00

Logic and Calculations
Per the approved Clause 14 Programme

ACTIVITY		DURATION (cal days)	START			FINISH		
			Baseline Logic	Calculation	Date	Baseline Logic	Calculation	Date
A	Order to Commence	0		actual	10-Dec-95			
B	Delivery of Main Equipment	131		actual	10-Dec-95		actual	22-Aug-96
C	Arrival of Main Equipment	0					actual	22-Aug-96
D	T.W. & Diversion Channel	176	First day after C ends	C end + 1	23-Aug-96	add duration	end of C + dur	14-Feb-97
E	Cofferdams	34	First day after D ends	D end + 1	15-Feb-97	add duration	end of D + dur	20-Mar-97
F	First River Diversion	0				end of E		20-Mar-97
G	Undersluices Excavation	103	Upon Diversion	F end	20-Mar-97	add duration	end of F + dur	01-Jul-97
H	Undersluices Cut-Off Wall	44	To start after 45 days of excavations	G start +45	04-May-97	add duration	H start + dur	16-Jun-97
I	Undersluices Concrete	318	First day after H ends	H end + 1	17-Jun-97	add duration	end of H + dur	30-Apr-98
J	Second River Diversion	0				After the Undersluices finished, 3 days of cofferdam works are required before diversion can be made	end of I + 4	04-May-98
K	Standard Bays Concrete	496	After Second River Diversion, 13 days of cofferdam works are required to protect the working area before these structures can start	J end +14	18-May-98	add duration	K start + dur	26-Sep-99
L	Fuse Plug Phase 1	272	Must start at the end of a high-flow season and when no more than 3 1/2 months are left before Second River Diversion to allow it to finish before the next high-flow season	End of 1998 high-flow season	16-Sep-98	Must be completely finished before the next high-flow season to enable overflow without damage to the structures	L start + dur	14-Jun-99
M	Fuse Plug Phase 2	272	Must begin at the start of the low-flow season in which the Standard Bays will be completed, so that the Standard Bays are used for overflow during the next high-flow season	End of 1999 high-flow season	16-Sep-99	Must be completely finished before the next high-flow season to avoid damage to the structures	M start + dur	14-Jun-00

Logic and Calculations
Per the approved Clause 14 Programme

ACTIVITY		DURATION (cal days)	START			FINISH		
			Baseline Logic	Calculation	Date	Baseline Logic	Calculation	Date
N	Overflow through Standard Bays	0				After the Standard Bays are completed and before the high-flow season	after end of K	26-Sep-99
O	Standard Bays Gates and M&E works	276	To start 420 cal days after the Standard Bays (when all piers are cast)	K start +420	12-Jul-99	add duration	O start + dur	13-Apr-00
P	Control Building	245	To start 70 cal days after the Standard Bays M&E works	O start +70	20-Sep-99	add duration	P start + dur	22-May-00
Q	Start of Impounding	0	Milestone highlighting the start of activity R below	One day after the latest of all predecessors	15-Jun-00			
R	Impounding	90	First day after all Structures and the Fuse Plug are completed	One day after the latest of all predecessors	15-Jun-00	add duration	R start + dur	12-Sep-00
S	Completion	0				End of Impounding and of all works	end of R	12-Sep-00

Logic and Calculations
Per the approved Clause 14 Programme

ACTIVITY		DURATION (cal days)	START			FINISH		
			Baseline Logic	Calculation	Date	Baseline Logic	Calculation	Date
A	Order to Commence	0		actual	10-Dec-95			
B	Delivery of Main Equipment	131		actual	10-Dec-95		actual	22-Aug-96
C	Arrival of Main Equipment	0					actual	22-Aug-96
D	T.W. & Diversion Channel	176		actual	02-Sep-96	End of this Period (21APR97) plus Remaining Duration foreseen at the end of this Period (4 days)		26-Apr-97
E	Cofferdams	34		actual	30-Dec-96		actual	14-Mar-97
F	First River Diversion	0					actual	01-Jan-97
G	Undersluices Excavation	103		actual	30-Jan-97	End of this Period (21APR97) plus Remaining Duration foreseen at the end of this Period (101 days)		31-Jul-97
H	Undersluices Cut-Off Wall	44	To start after 45 days of excavations	Only 2 days of excavations had been done.	04-Jun-97	add duration	H start + dur	17-Jul-97
I	Undersluices Concrete	318	First day after H ends	H end + 1	18-Jul-97	add duration	end of H + dur	31-May-98
J	Second River Diversion	0				After the Undersluices finished, 3 days of cofferdam works are required before diversion can be made	end of I + 4	04-Jun-98
K	Standard Bays Concrete	496	After Second River Diversion, 13 days of cofferdam works are required to protect the working area before these structures can start	J end +14	18-Jun-98	add duration	K start + dur	27-Oct-99
L	Fuse Plug Phase 1	272	Must start at the end of a high-flow season and when no more than 3 1/2 months are left before Second River Diversion to allow it to finish before the next high-flow season	End of 1998 high-flow season	16-Sep-98	Must be completely finished before the next high-flow season to enable overflow without damage to the structures	L start + dur	14-Jun-99
M	Fuse Plug Phase 2	272	Must begin at the start of the low-flow season in which the Standard Bays will be completed, so that the Standard Bays are used for overflow during the next high-flow season	End of 1999 high-flow season	16-Sep-99	Must be completely finished before the next high-flow season to avoid damage to the structures	M start + dur	14-Jun-00

Logic and Calculations
Per the approved Clause 14 Programme

ACTIVITY		DURATION (cal days)	START			FINISH		
			Baseline Logic	Calculation	Date	Baseline Logic	Calculation	Date
N	Overflow through Standard Bays	0				After the Standard Bays are completed and before the high-flow season	after end of K	27-Oct-99
O	Standard Bays Gates and M&E works	276	To start 420 cal days after the Standard Bays (when all piers are cast)	K start +420	12-Aug-99	add duration	O start + dur	14-May-00
P	Control Building	245	Revised Plan: Start at the latest time that would allow activity P1 to finish before Impounding	P end less dur	18-May-99	Revised Plan: Finish at the latest time that would allow activity P1 to finish before Impounding	P1 end less dur	18-Jan-00
P1	Control Building M&E works by Others	148	To start after Control Building structure is finished	P1 end less dur	19-Jan-00	Revised Plan: This work by Others is to be completed prior to Impounding	Q less 1 day	14-Jun-00
Q	Start of Impounding	0	Milestone highlighting the start of activity R below	One day after the latest of all predecessors	15-Jun-00			
R	Impounding	90	First day after all Structures and the Fuse Plug are completed	One day after the latest of all predecessors	15-Jun-00	add duration	R start + dur	12-Sep-00
S	Completion	0				End of Impounding and of all works	end of R	12-Sep-00

Logic and Calculations
Per the approved Clause 14 Programme

ACTIVITY		DURATION (cal days)	START			FINISH		
			Baseline Logic	Calculation	Date	Baseline Logic	Calculation	Date
A	Order to Commence	0		actual	10-Dec-95			
B	Delivery of Main Equipment	131		actual	10-Dec-95		actual	22-Aug-96
C	Arrival of Main Equipment	0					actual	22-Aug-96
D	T.W. & Diversion Channel	176		actual	02-Sep-96		actual	26-Apr-97
E	Cofferdams	34		actual	30-Dec-96		actual	14-Mar-97
F	First River Diversion	0					actual	01-Jan-97
G	Undersluices Excavation	103		actual	30-Jan-97		actual	11-Mar-98
H	Undersluices Cut-Off Wall	44		actual	17-Dec-97	End of this Period (11MAR98) plus Remaining Duration foreseen at the end of this Period (14 days)		25-Mar-98
I	Undersluices Concrete	318	First day after H ends	H end + 1	26-Mar-98	add duration	end of H + dur	06-Feb-99
J	Second River Diversion	0				After the Undersluices finished, 3 days of cofferdam works are required before diversion can be made	end of I + 4	10-Feb-99
K	Standard Bays Concrete	496	After Second River Diversion, 13 days of cofferdam works are required to protect the working area before these structures can start	J end + 14	24-Feb-99	add duration	K start + dur	04-Jul-00
L	Fuse Plug Phase 1	272	Must start at the end of a high-flow season and when no more than 3 1/2 months are left before Second River Diversion to allow it to finish before the next high-flow season	End of 1999 high-flow season	16-Sep-99	Must be completely finished before the next high-flow season to enable overflow without damage to the structures	L start + dur	13-Jun-00
M	Fuse Plug Phase 2	272	Must begin at the start of the low-flow season in which the Standard Bays will be completed, so that the Standard Bays are used for overflow during the next high-flow season	End of 2000 high-flow season	16-Sep-00	Must be completely finished before the next high-flow season to avoid damage to the structures	M start + dur	14-Jun-01
N	Overflow through Standard Bays	0				After the Standard Bays are completed and before the high-flow season	after end of K	04-Jul-00

Logic and Calculations
Per the approved Clause 14 Programme

ACTIVITY		DURATION (cal days)	START			FINISH		
			Baseline Logic	Calculation	Date	Baseline Logic	Calculation	Date
O	Standard Bays Gates and M&E works	276	To start 420 cal days after the Standard Bays (when all piers are cast)	K start +420	19-Apr-00	add duration	O start + dur	20-Jan-01
P	Control Building	245	Revised Plan: Start at the latest time that would allow activity P1 to finish before Impounding	P end less dur	17-May-00	Revised Plan: Finish at the latest time that would allow activity P1 to finish before Impounding	P1 end less dur	17-Jan-01
P1	Control Building M&E works by Others	148	To start after Control Building structure is finished	P1 end less dur	18-Jan-01	Revised Plan: This work by Others is to be completed prior to Impounding	Q less 1 day	14-Jun-01
Q	Start of Impounding	0	Milestone highlighting the start of activity R below	One day after the latest of all predecessors	15-Jun-01			
R	Impounding	90	First day after all Structures and the Fuse Plug are completed	One day after the latest of all predecessors	15-Jun-01	add duration	R start + dur	12-Sep-01
S	Completion	0				End of Impounding and of all works	end of R	12-Sep-01

Logic and Calculations
Per the approved Clause 14 Programme

ACTIVITY		DURATION (cal days)	START			FINISH		
			Baseline Logic	Calculation	Date	Baseline Logic	Calculation	Date
A	Order to Commence	0		actual	10-Dec-95			
B	Delivery of Main Equipment	131		actual	10-Dec-95		actual	22-Aug-96
C	Arrival of Main Equipment	0					actual	22-Aug-96
D	T.W. & Diversion Channel	176		actual	02-Sep-96		actual	26-Apr-97
E	Cofferdams	34		actual	30-Dec-96		actual	14-Mar-97
F	First River Diversion	0					actual	01-Jan-97
G	Undersluices Excavation	103		actual	30-Jan-97		actual	11-Mar-98
H	Undersluices Cut-Off Wall	44		actual	17-Dec-97		actual	21-Apr-98
I	Undersluices Concrete	318		actual	17-Mar-98	End of this Period (28MAY99) plus Remaining Duration foreseen at the end of this Period (274 days)		26-Feb-00
J	Second River Diversion	0				After the Undersluices finished, 3 days of cofferdam works are required before diversion can be made	end of I + 4	01-Mar-00
K	Standard Bays Concrete	496	After Second River Diversion, 13 days of cofferdam works are required to protect the working area before these structures can start	actual	09-Dec-98	Activity in Progress, but original logic prevails: after River Diversion (1MAR00) add 13 days of cofferdam works plus the Remaining Duration (451 days)	J end + 13 +451	08-Jun-01
L	Fuse Plug Phase 1	272	Must start at the end of a high-flow season and when no more than 3 1/2 months are left before Second River Diversion to allow it to finish before the next high-flow season	End of 2000 high-flow season	16-Sep-00	To be completely finished before the next high-flow season to enable overflow without damage to the structures	L start + dur	14-Jun-01
M	Fuse Plug Phase 2	272	Must begin at the start of the low-flow season in which the Standard Bays will be completed, so that the Standard Bays are used for overflow during the next high-flow season	End of 2001 high-flow season	16-Sep-01	To be completely finished before the next high-flow season to avoid damage to the structures	M start + dur	14-Jun-02

Logic and Calculations
Per the approved Clause 14 Programme

ACTIVITY		DURATION (cal days)	START			FINISH		
			Baseline Logic	Calculation	Date	Baseline Logic	Calculation	Date
N	Overflow through Standard Bays	0				After the Standard Bays are completed and before the high-flow season	after end of K	08-Jun-01
O	Standard Bays Gates and M&E works	276	Predecessor started out of sequence, but original logic prevails: Start 420 cal days after the forecasted resume date of the Standard Bays (when all piers are cast).	end of J plus 14 + 420	09-May-01	add duration	O start + dur	09-Feb-02
P	Control Building	245	Revised Plan: Start at the latest time that would allow activity P1 to finish before Impounding	P end less dur	17-May-01	Revised Plan: Finish at the latest time that would allow activity P1 to finish before Impounding	P1 end less dur	17-Jan-02
P1	Control Building M&E works by Others	148	To start after Control Building structure is finished	P1 end less dur	18-Jan-02	Revised Plan: This work by Others is to be completed prior to Impounding	Q less 1 day	14-Jun-02
Q	Start of Impounding	0	Milestone highlighting the start of activity R below	One day after the latest of all predecessors	15-Jun-02			
R	Impounding	90	First day after all Structures and the Fuse Plug are completed	One day after the latest of all predecessors	15-Jun-02	add duration	R start + dur	12-Sep-02
S	Completion	0				End of Impounding and of all works	end of R	12-Sep-02

Logic and Calculations
Per the Operative Programme Adopted in May 1999

ACTIVITY		DURATION after 28MAY99 (cal days)	START			FINISH		
			Programme Logic	Calculation	Date	Programme Logic	Calculation	Date
I	Undersluices Concrete	263	Already started on 17 MAR 98			add duration	28MAY99 plus duration	15-Feb-00
J	Second River Diversion	0				After the Undersluices and Standard Bays are finished, and one week after the end of the 2000 high-flow season (discharge lower than 3000 m3/s)	end of I, end of K and 8 days after 15SEP00, whichever is later	23-Sep-00
K	Standard Bays Concrete	430	Already started on 9 DEC 98			add duration	28MAY99 plus duration	31-Jul-00
L&M	Close Diversion Channel and Construct All of Fuse Plug	417	Start at the end of the high-flow season when Undersluices and Standard bays are finished and after Standard Bays are available for overflow.	end of N	15-Sep-00	add duration	L&M start + dur	05-Nov-01
N	Overflow through Standard Bays	0				After the 2000 high-flow season and after Standard Bays are completed and available for overflow	end of K, or 15SEP00, whichever is later	15-Sep-00
P	Control Building	245	Could have started	Start of the period that is about to start	29-May-99	add duration	start of P + dur	28-Jan-00
P1	Control Building M&E works by Others	148	First day after P ends	P1 end + 1	29-Jan-00	add duration	end of P + dur	24-Jun-00
Q	Head Regulator Gates	121	After Procurement and Logistics (delivery, gantry cranes in place, grouting materials, etc.)	Not earlier than 21OCT99	21-Oct-99	add duration	start of Q + dur	18-Feb-00
R	Undersluices Gates	124	First day after Q ends	Q end + 1	19-Feb-00	add duration	end of Q + dur	21-Jun-00
S	Standard Bays Gates	379	First day after R ends	R end + 1		add duration	end of R + dur	05-Jul-01
X	Start of Impounding	0	Milestone highlighting the start of activity R below	One day after the latest end from all the activities above	06-Nov-01			
Y	Impounding	90	First day after all Structures and the Fuse Plug are completed	One day after the latest end from all the activities above	06-Nov-01	add duration	R start + dur	03-Feb-02
Z	Completion	0				End of Impounding and of all works	end of R	03-Feb-02

Logic and Calculations
Per the Operative Programme Adopted in May 1999

ACTIVITY		DURATION after 28MAY99 (cal days)	START			FINISH		
			Programme Logic	Calculation	Date	Programme Logic	Calculation	Date
I	Undersluices Concrete	263	Already started on 17 MAR 98			End of this Period (15AUG00) plus Remaining Duration foreseen at the end of this Period (31 days)		15-Sep-00
J	Second River Diversion	0				After the Undersluices and Standard Bays are finished, and one week after the end of the 2000 high-flow season (discharge lower than 3000 m3/s)	end of I, end of K and 8 days after 15SEP00, whichever is later	15-Oct-00
K	Standard Bays Concrete	496	Already started on 9 DEC 98			End of this Period (15AUG00) plus Remaining Duration foreseen at the end of this Period (60 days)		15-Oct-00
L&M	Close Diversion Channel and Construct All of Fuse Plug	417	Start at the end of the high-flow season when Undersluices and Standard bays are finished and after Standard Bays are available for overflow.	end of N	15-Oct-00	add duration	L&M start + dur	05-Dec-01
N	Overflow through Standard Bays	0				After the 2000 high-flow season and after Standard Bays are completed and available for overflow	end of K, or 15SEP00, whichever is later	15-Oct-00
P	Control Building	245	Could have started	Start of the period that is about to start	16-Aug-00	add duration	start of P + dur	17-Apr-01
P1	Control Building M&E works by Others	148	First day after P ends	P1 end + 1	18-Apr-01	add duration	end of P + dur	12-Sep-01
Q	Head Regulator Gates	121	actual start			24-Apr-00	End of this Period (15AUG00) plus Remaining Duration foreseen at the end of this Period (87 days)	
R	Undersluices Gates	124	First day after Q ends	Q end + 1	11-Nov-00	add duration	end of Q + dur	14-Mar-01
S	Standard Bays Gates	379	First day after R ends	R end + 1		add duration	end of R + dur	28-Mar-02
X	Start of Impounding	0	Milestone highlighting the start of activity R below	One day after the latest end date from all the activities above	29-Mar-02			
Y	Impounding	90	First day after all Structures and the Fuse Plug are completed	One day after the latest end from all the activities above	29-Mar-02	add duration	R start + dur	26-Jun-02
Z	Completion	0				End of Impounding and of all works	end of R	26-Jun-02

Logic and Calculation:
Per the Operative Programme Adopted in May 199

ACTIVITY	DURATION after 28MAY99 (cal days)	START			FINISH		
		Programme Logic	Calculator	Date	Programme Logic	Calculator	Date
I Undersluices Concrete	263	Already started on 17 MAR 98			Actual Finish		22-Sep-00
J Second River Diversion	0				Actual Finish		23-Sep-00
K Standard Bays Concrete	496	Already started on 9 DEC 98			Actual Finish		11-Jan-01
L&M Close Diversion Channel and Construct All of Fuse Plug	417	Actual Start		16-Sep-00	End of this Period (20JAN01) plus Remaining Duration foreseen at the end of this Period (282 days)		29-Oct-01
N Overflow through Standard Bays	0				Actual Finish		11-Jan-01
P Control Building	245	DESIGN DELAYS: Foreseen delays as explained in the updated Operative Programme issued by Contractor with letter XXXXX dated 28FEB01	Start not earlier than 24AUG01	24-Aug-01	add duration	start of P + dur	25-Apr-02
P1 Control Building M&E works by Others	148	First day after P ends	P1 end +1	26-Apr-02	add duration	end of P + dur	20-Sep-02
Q Head Regulator Gates	121	actual start		24-Apr-00	REVISED PLAN: Remaining Duration estimated to be 105 days as explained in the updated Operative Programme issued by Contractor with letter XXXXXX dated 28FEB01 End of Period 6 plus 105 days		05-May-01
R Undersluices Gates	167	REVISED PLAN: Duration changed and activity re-sequenced to start 9 days after Standard Bays Gates, as explained in the updated Operative Programme issued by Contractor with letter XXXXXX dated 28FEB01	S end +9	07-Dec-01	add duration	end of S + dur	14-May-02
S Standard Bays Gates	300	REVISED PLAN: Duration changed and activity re-sequenced to start on 1FEB01, concurrent to the Head Regulator Gates, as explained in the updated Operative Programme issued by Contractor with letter XXXXXX dated 28FEB01	Start not earlier than 1FEB01	01-Feb-01	add duration	R start + dur	28-Nov-01
X Start of Impounding	0	Milestone highlighting the start of activity R below	One day after the latest end date from all the activities above	21-Sep-02			
Y Impounding	90	First day after all Structures and the Fuse Plug are completed	One day after the latest end from all the activities above	21-Sep-02	add duration	R start + dur	19-Dec-02
Z Completion	0				End of Impounding and of all works	end of R	19-Dec-02

Logic and Calculation:
Per the Operative Programme Adopted in May 199

ACTIVITY		DURATION after 28MAY99 (cal days)	START			FINISH		
			Programme Logic	Calculator	Date	Programme Logic	Calculation	Date
I	Undersluices Concrete	263	Already started on 17 MAR 98			Actual Finish		22-Sep-00
J	Second River Diversion	0				Actual Finish		23-Sep-00
K	Standard Bays Concrete	496	Already started on 9 DEC 98			Actual Finish		11-Jan-01
L&M	Close Diversion Channel and Construct All of Fuse Plug	417	Actual Start		16-Sep-00	End of this Period (25SEP01) plus Remaining Duration foreseen at the end of this Period (46 days)		10-Nov-01
N	Overflow through Standard Bays	0				Actual Finish		11-Jan-01
P	Control Building	245	Actual Start		31-May-02	End of this Period (25SEP01) plus Remaining Duration foreseen at the end of this Period (248 days)		31-May-02
P1	Control Building M&E works by Others	148	First day after P ends	P1 end +1	01-Jun-02	add duration	end of P + dur	26-Oct-02
Q	Head Regulator Gates	121	actual start		24-Apr-00	Actual Finish		19-Apr-01
R	Undersluices Gates	167	REVISED PLAN: Did not start in Period 7 because it was highflow season, but was ready to start after the data date	not earlier than the end of the Period	25-Sep-01	add duration	R start + dur	11-Mar-02
S	Standard Bays Gates	300	actual start		12-Feb-01	Actual Finish		14-Jul-01
X	Start of Impounding	0	Milestone highlighting the start of activity R below		One day after the latest end date from all the activities above			27-Oct-02
Y	Impounding	90	First day after all Structures and the Fuse Plug are completed	One day after the latest end from all the activities above	27-Oct-02	add duration	R start + dur	24-Jan-03
Z	Completion	0				End of Impounding and of all works	end of R	24-Jan-03