RALPH J. STEPHENSON, P.E.
CONSULTING ENGINEER

June 1, 1981

Subject: Monitoring Report #1

Council Bluffs Elevator Expansion

Council Bluffs, Iowa

Cargill, Inc.

Project: 81:26

Date of Monitoring: May 21, 1981 (working day 100) and May 22, 1981 (working day 101)

Monitored from Issue #1, dated May 21, 1981 (working day 100) and May 22, 1981 (working day 101)

Target completion date: to be set

Actions taken:

- Reviewed general scope of work
- Discussed obtaining permits, early purchase items and approvals required
- Prepared network model for contract document bid packages in phase #1
- Prepared detailed analysis of procurement work
- Prepared summary diagram for phase #1 work

Those attending the meetings were:

May 21, 1981 (working day 100)

Mr. Jerry Hasbrouck - Fling & Partners
Mr. Bruce Weis - CMD Engr.
Mr. Dennis Jones - CMD Engr. and Const.
Mr. Glenn Wondra - Grain lab
Mr. Ed Baar - CMD Engr.
Miss Sharon Ensminger - CMD Eng.
Mr. Dave Muilenburg - Grain lab

May 22, 1981 (working day 101)

Mr. Bruce Weis - CMD Engr.
Mr. Dennis Jones - CMD Engr & Const.
Mr. Bud Smith - CMD Engr.

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May 22, 1981 (working day 101)(continued)

Mr. Glenn Wondra - Grain lab
Mr. Ed Baar - CMD Engr.
Miss Sharon Ensminger - CMD Engr.
Mr. Dave Muilenburg - Grain lab

This program is an expansion of the Council Bluffs elevator facility and consists of two phases, the first of which contains four major areas of work and the second of which contains three major areas of work. These areas are:

Phase #1

- Truck receiving (TR)
- Truck distribution (TD)
- Steel tank and drawoff system (TK)
- Rail yard (RY)

Phase #2

- Rail loadout system (RLO)
- Truck marshalling area (TMA)
- Office expansion (OE)

We first prepared network models for the major phase #1 contract document packages. These included:

- Phase #1 structures and machinery (P1SM)
- Phase #1 power and control wiring, instrumentation and temperature systems (P1EL)
- Steel tank furnish and erect (TK)
- Rail yard trackage (RY)

These networks are shown on sheet F-1, Issue #1, dated May 21, 1981 (working day 100). Also included in phase #1 contract package work are two other systems not diagrammed today. These include:

- Aeration system (AS)
- Paint steel tanks (PTK)

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For the four basic contracts - P1SM, P1EL, TK and Ry - the key dates established during our session are shown below:

	P1SM	P1EL	TK	RY
Complete, prepare, and submit CD package	June 8, 1981 (w.d.111)*	June 22, 1981 (w.d. 121)	-	June 15, 1981 (w.d.116)
Print and issue CD's	June 18,1981 (w.d.119)	July 2,1981 (w.d.129)	-	June 24, 1981 (w.d.123)
Receive construction proposals	July 10,1981 (w.d.134)	July 24,1981 (w.d.144)	June 12, 1981 (w.d.115)	July 16, 1981 (w.d.138)
Select contractor	July 17,1981 (w.d.139)	July 31,1981 (w.d.149)	June 19, 1981 (w.d.120)	July 23, 1981 (w.d.143)
Issue letter of intent	July 21,1981 (w.d.141)	Aug.3, 1981 (w.d.150)	July 21, 1981 (w.d.141)	July 24, 1981 (w.d.144)

*Working day

A major restraint on issuing letters of intent is the approvals and permits needed. The most critical of these is the FIA flood plain redesignation. It is anticipated that we will have the area redesignated by July 20, 1981 (working day 140) with the city issuing a phase #1 general building permit within five working days of that redesignation or by July 27, 1981 (working day 145). It is anticipated that we will have the Iowa EPA package approval also by July 20, 1981 (working day 140). The other critical approval restraint is the review and approval by the finance committee expected to begin by June 19, 1981 (working day 120). These approvals are shown on sheet F-3, Issue #1, dated May 21, 1981 (working day 100).

From this point in our planning work we next prepared a detailed analysis matrix showing the areas and the elements to be installed in each of these areas after which we assigned a position in the contract document package at which this element would be shown in detail. This matrix was copied by Sharon Ensminger of CMD Engineering and will be issued to all parties concerned.

From the contract document package matrix we then moved to preparation of a procurement work plan for phase #1. This plan is shown on sheet R-1, Issue #1, dated May 21, 1981 (working day 100). In the procurement tabulation we listed all of the identifiable delivery items in each of the major

contract areas for phase #1, and established as many durations as possible for preparation and submittal of shop drawings (P/S SD), review and approval of shop drawings (R/A SD), and fabrication and delivery (F/D) of the item. These procurement elements were found to heavily control the progress that can be made on the project in the field. Thus, procurement coupled to initial approvals of work and the redesignation of the floor plain by FIA set the major item framework of the project.

From the packaging matrix and the phase #1 procurement work tabulation we then proceeded to prepare a summary network model for construction of the facility. Due to the press of time we were not able to complete both phases but we did finish diagramming and quantification of the following work exclusive of secondary electrical distribution and final connections.

- Truck receiving and scale pits construction
- Leg L5 installation
- Motor control center and primary power distribution installation
- Truck shed and control room construction
- Steel tank work
- Truck distribution system work

These elements are shown on sheets #1 and #2 of the network model Issue #1 dated May 22, 1981 (working day 101).

It is the intent to start work very early at the truck receiving and scale pits followed closely by work on leg L5 , this being done in conjunction with construction of the motor control center and primary power distribution installation. It is anticipated that the P-1 SM contractor could mobilize and be on the site by July 28, 1981 (working day 146) within the approval and permit assumptions made in the front end modeling.

It is expected that the truck receiving pit could be ready for superstructure construction by about October 13, 1981 (working day 200) at which time the truck scale control room could be erected along with the steel for the truck shed. The truck receiving area is presently to be closed in ready to accept the truck receiving control panel by about November 24, 1981 (working day 230). Thus, it is anticipated at the control room that the constraint on setting the panel will be construction work rather than control panel delivery since delivery of the panel is projected for October 27, 1981 (working day 210).

At leg L5 the base support could be built as soon as the existing shed at the new truck receiving has been demolished in part. However, structural steel supports for the leg cannot be installed until delivery of structural steel, presently projected at October 21, 1981 (working day 206). Following erection of the supports the leg can be set and installed followed by the drive, and then the leg 5 belt and buckets could be put in place. Meanwhile, conveyor C-15 along with the sampler system will be put in place once the truck receiving pit has been poured out at the adjoining area.

It should be noted here that approvals on shop drawings will be critical as well as the preparation and submittal of such shop drawings. We prepared a small analysis model of shop drawing approval procedures, and it was decided we would use a total of 15 working days from submittal of the shop drawings to Cargill and Fling out to the point where the shop drawings were sent back to the contractor involved. Submittals will be in three copies to Fling and one copy direct to Mr. Weis at Cargill. From that point the procedure for checking and redistribution of shop drawings is shown on the network model on the flip sheet. I suggest this model be drafted on a small sheet of paper and given to each of those who are concerned about the distribution process.

At the motor control center and primary power distribution areas, work can begin quite early probably as soon as August 4, 1981 (working day 151) on building foundation installation. Primary power conduit from the power pole entry will be started about August 11, 1981 (working day 156) and cable will be pulled once the motor control center is set and aligned. This is expected to be by October 22, 1981 (working day 207). Once we have set and aligned the motor control center we also can complete running the secondary power and control conduit to the motor control center from the various areas of the facility. Other secondary power and control conduit will be started just as quickly as each of the work areas is far enough along to permit installation.

Truck shed and control room work will proceed from about October 13, 1981 (working day 200) and will generally key on the target date of November 30, 1981 (working day 233) for setting of control panel ready to pull wire and make terminations.

Steel tank work is very critical and requires considerable pre-tank erection site work. Sheeting for the steel tank area will be driven starting on August 11, 1981 (working day 156). After sheeting the area will be mass excavated, engineered fill placed while the drawoff tunnel is being constructed and once the tunnel is completed, the ring footings for the tank will be installed. Following completion of the tank ring

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footings on October 26, 1981 (working day 209) the steel tank will be erected. Present target for completion of the steel tank erection is December 30, 1981 (working day 254).

Following steel tank erection, aeration duct work, the aeration fan, and vent #2 for conveyor #17 (C-17) can be installed. This is a key date and every effort will be made to hit this target earlier. The winters in Council Bluffs are very severe and much of the work on the steel tanks and truck distribution conveyors is weather sensitive. Therefore, it is imperative that heavy efforts be made to get the majority of the installation complete prior to the onset of difficult working weather.

Truck distribution work consists of installation of conveyors C-16 and C-17 along with the related structures work which includes a supported bent on the steel tank and a separate bent on pile foundations. It is anticipated that truck distribution area will be available for erection of structural steel by August 21, 1981 (working day 164). However, structural steel deliveries are presently set at about October 21, 1981 (working day 206).

Present plans indicate that the last item to be installed in the truck distribution system, completion of the C-17 conveyor, will extend out to about January 15, 1982 (working day 265). This extended date is to a great extent due to the later than desired completion date for the steel tanks (December 30, 1981 working day 254).

General Summary

Overall, our work indicates that the initial approval period is critical and if any set of conditions force us beyond our presently assumed approval receipts the project will be in serious time difficulties. Thus, it is imperative that careful attention be given to FIA approval along with that of the finance committee and the Iowa EPA.

I shall be in touch with Mr. Weis shortly to determine the point at which we should continue our planning work.

Ralph J. Stephenson, P.E.

RJS:sps

To: Mr. Bruce Weis

cc: Mr. Don Biorn

#2.

RALPH J. STEPHENSON, P.E.
CONSULTING ENGINEER

August 22, 1981

Subject: Monitoring Report #2

Council Bluffs Elevator Expansion

Council Bluffs, Iowa

Cargill, Inc.

Project: 81:26

Date of Monitoring: August 5, 1981 (working day 152)

Monitored from Issue #1, dated May 22, 1981 (working day 101)

Target completion date: to be set

Actions taken:

- Monitored current status of work
- Reviewed scope of work currently covered by phase #1 and phase #2
- Updated network model for phase #1 work with phase #1 contractor (sheets #1, #2, and #3)
- Prepared network model for phase #2 work with Cargill CMD engineering staff (sheets #4 and #5)
- Continued work on procurement tabulation sheet R-1 for phase #2 work

Those attending the meetings were:

Mark Meester, LPW Inc. (a.m. only)
Bud Smith, Cargill CMD
Bruce Weis, Cargill CMD
Merle Hansen,Cargill, Council Bluffs, Iowa
Dennis Jones - Cargill CMD
Glenn Wondra, Grain Lab
Dave Muilenburg, Grain Lab
Wayne David - Cargill, Kansas City
Sharon Ensminger, Cargill, CMD

General Summary

Since our previous meeting there has been a redefinition of the work scope for phases #1 and #2. These were first discussed in some detail and then we updated the network models for the redefined phase #1 work. These models are shown on sheets #1, #2, and #3 Issue #2, dated August 5, 1981 (working day 152). Phase #1 work now includes the following:

- Truck receiving and scale pits
- Leg L-5
- MCC #3 and primary power distribution
- Conveyor C-16
- Dust filter system

The representative of the contractor for this work, Mark Meester, reviewed the plan with us and our discussions resulted in an updated network model which took into account job conditions now existing of which we are presently aware. There were some minor changes to the logic and durations but generally the work plan for the truck receiving and scale pits and leg L-5 closely correlated with the previous network model.

At motor control center #3 a later than anticipated delivery of the motor control center could lengthen out the time previously planned for construction there. Truck shed and control room work remained somewhat the same as with the previous plan except that authentic information on delivery of the control panel is not available due to further consideration being given this particular item.

We also diagrammed the phase #1 dust filter system for the plant. It appears that this work can be completed and hooked up by late November, 1981.

The network models for phase #1 will now be reviewed by Cargill staff and the contractor for possible revisions and additions. However, it appears that the logic and durations presently are reasonable and we shall monitor from these until additional changes are requested.

At present it is expected to begin driving sheet piling at the new truck receiving by August 10, 1981 (working day 155). This will allow mass excavation and construction of the new truck receiving pit to proceed on through to completion. A change in planning has now dictated that the existing shed at the truck receiving area is to be completely removed following construction of a warehouse and shop building.

The new warehouse and shop is expected to be completed and occupied by October 1, 1981 (working day 192). However, demolition of the old building does not now restrain progress on the new truck receiving pit nor on construction of the leg L-5 base support.

The electrical contractor for phase #1 will probably be able to move on the site by August 17, 1981 (working day 160) and begin installation of underground power conduit at motor

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control center #3. This work will be followed by construction of the MCC building foundation slab on grade, and after that, by setting the transformer and erection of exterior masonry. Installation of primary power conduit from the pole entry will start about August 17, 1981 (working day 160). This action will go on through to completion of the motor control center, pulling primary cable and making the final hookup.

Work on the dust filter system is restrained by demolition of the existing building and is expected to begin about October 15, 1981 (working day 202).

As with most projects of this nature, procurement will be a very critical element. In addition, approval of submittals on a prompt and continuous basis will play an important role in avoiding delays. We are presently assuming that shop drawing turnaround time will be maintained at a maximum of three weeks (15 working days) from the time shop drawings are received until they are back in the contractor's hands. Likewise it will be essential to maintain a constant flow of shop drawings through the submittal process so fabrication and delivery are not delayed.

At our session we prepared a network model for phase #2 construction of the scale tower. These networks, shown on sheet #4 and #5, Issue #2, dated August 5, 1981 (working day 152) were done primarily with the Cargill staff and will be confirmed with the scale tower contractor once he is brought on board. Present plans are to complete preparing scale tower structures and machinery contract documents and issue by August 31, 1981 (working day 170). Proposals are due back by September 29, 1981 (working day 190) and a letter of intent is to be issued by October 13, 1981 (working day 200). The LOI will immediately unlock preparation and submittal of sheeting, plans and details, procurement of test pile materials, and delivery of steel piling. Electrical drawings will proceed concurrently with issue of electrical to be by September 15, 1981 (working day 180). Proposals are due by October 6, 1981 (working day 195) with a letter of intent to be issued by October 20, 1981 (working day 205).

We did not prepare network diagrams for electrical work and will carry this out at a subsequent session. Plans are presently to have a meeting with the scale tower contractors in mid-October 1982 to review the network models prepared and issue a construction set that will be agreed to and suitable for the actual construction process. Meanwhile, of course, we shall plan from the pre-construction diagrams.

Mr. Weis has distributed copies of the documents prepared at this session and will retain the rough tracings in his file

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for our next meeting. I shall be in touch with Mr. Weis shortly to set the date for the next monitoring and planning session.

Ralph J. Stephenson, P.E.

RJS:sps

To: Mr. Bruce Weis

cc: Mr. Don Biorn

RALPH J. STEPHENSON, P.E.
CONSULTING ENGINEER

November 12, 1981

Subject: Monitoring Report #3

Council Bluffs Elevator Expansion

Council Bluffs, Iowa

Cargill, Inc.

Project: 81:26

Date of Monitoring: November 2, 1981 (working day 214)

Monitored from Issue #2, dated August 5, 1981 (working day 152)

Target completion dates: to be set

Actions taken:

- Monitored current status of work
- Completed diagramming phase #1 work
- Updated network model for phase #2 work (sheets #4, #5, and #6)

Those attending the meetings were:

Mark Meester, L.P.W., Inc. (a.m. only)
Bud Smith, Cargill CMD
Bruce Weis, Cargill CMD
Carl Lind, Cargill CMD
Merle Hansen, Cargill Council Bluffs, Iowa
Dennis Jones, Cargill CMD
Glenn Wondra, Grain Lab
Dave Muilenburg, Grain Lab
Wayne David, Cargill Kansas City
Sharon Ensminger, Cargill CMD
Bob Thomas, Grain Lab

Phase #1 work

Truck receiving pit walls and deck are nearly complete, truck receiving hoppers are being set and aligned, and the truck platform scale pit has been constructed, but not yet backfilled. It is expected that the truck receiving pit frame and grating will be set shortly after which truck scale control room masonry will be started. The present target for starting truck scale control room masonry is November 11, 1981 (working day 221).

This sequence leads on out to setting the truck receiving control panel, hooking it up, and then installing and testing the scale equipment. Present plans are to have scale equipment installed and tested by about January 14, 1982 (working day 264).

At leg #5, work on the base support is to start November 20, 1981 (working day 228). Following construction of the support and modification of the rail loadout spout platform, leg #5 boot support steel can be erected. This steel is due to begin arriving on the job site this week. Concurrently with erection of the boot support steel leg #5 top support steel can also be erected.

One of the most important items in this early work is installation of motor control center #3 (MCC-3). There the precast roof deck is on and insulation and roofing is being completed. It is anticipated that the main distribution panel will be on the job November 30, 1981 (working day 333), and once it, and the motor control center (also due to be delivered on November 30, 1981 (working day 233)), are set the primary cable can be pulled and hookup completed. It is planned to have the primary cable pulled and hooked up by December 13, 1981 (working day 243).

Another important task to be completed at the MCC-3 building is installation of the new phase #1 IO panel. This panel is to be delivered to the job site on November 16, 1981 (working day 224) and will be installed and is scheduled to be hooked up by about December 18, 1981 (working day 247).

At the truck distribution area (TD) the dust ducts on top of the silos will be relocated starting November 5, 1981 (working day 217). Once the ducts are relocated, conveyor C-16 conveyor supports can be installed followed by installation of a portion of the C-16 elements. Completion of C-16 conveyor elements depends upon completion of L-5 top support steel. Presently it is anticipated that the C-16 area could meet an early finish target of December 15, 1981 (working day 244).

Installation of the phase #1 dust filter system (DS) will probably begin about November 20, 1981 (working day 228) and continue on through to about December 29, 1981 (working day 253) as an early finish. To set and connect the air compressor it will be necessary to construct a small air compressor shed. This work will start in the near future. Another important element of the dust filter system is installation of the new dust delivery system. When electrical conduit for the dust system is complete, the bin vent filters and piping are installed, the air compressors are set and connected, and the dust delivery duct work is in place the motivator

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can be relocated. This installation will probably require a weekend of shutdown, and an exact date will set set soon.

Once the network analysis was made for phase #1 work, it was tentatively decided to set January 14, 1982 (working day 264) as a completion target for phase #1, after which the run in of the system will begin by actually passing grain through the system.

Phase #2 work

Phase #2 consists of installing a rail loadout system. We completed our pre-construction diagramming of this work on the basis that the contract documents are to be issued for the scale tower on November 16, 1981 (working day 224) and for the electrical work on December 1, 1981 (working day 234). This will allow a structures and machinery letter of intent to be issued by December 30, 1981 (working day 254), and a letter of intent for electrical work to be issued by December 22, 1981 (working day 249).

The activities in the field for the scale tower basically concern installation of the scale tower pit, followed by erection of the scale tower structural steel and equipment, and then finishing up with installation of conveying, weighing, and hoisting elements in the scale tower.

Presently it appears that work on sheet piling for the scale tower can begin about January 21, 1982 (working day 269). Piling for the scale tower columns can be started about January 14, 1982 (working day 264). Mass excavation for the scale tower pit will begin about February 16, 1982 (working day 287) with the pit being completed ready for erection of scale tower structural steel when it arrives on a project date of May 6, 1982 (working day 344).

Following on out in the scale tower work plan, our early start/ early finish analysis indicates that the latest activity in the scale tower construction is installation of conduit and wire, presently estimated to be completed by September 14, 1982 (working day 434). Probably there will be some work that will extend beyond that date since all of the equipment has to be final hooked up, activated, and tested.

Concurrently with construction of the scale tower pit, work on the C-22 platform and bridge can begin. This consists of installation of support steel for C-22, the control cab, and spouting. The present plan indicates that the area will be ready to hang the rail loadout control cab by about

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April 19, 1982 (working day 331). It should be noted that the control console is presently to be pre-installed in the control cab. This matter should be given special attention since we are assuming that once the cab is hung that conduit and wire, followed by control cab terminations can be made immediately.

Installation of a new rail loadout motor control center (RLMCC) is to be made at the MCC #3 housing building. The new rail loadout motor control center is expected on the job April 1, 1982 (working day 319), and will be ready to energize by about May 6, 1982 (working day 344). There will be a one-day shutdown required while this RLMCC is being energized. A final date for the shutdown will be set soon. Once the new RLMCC is installed it must be tied into the IO panel at the MCC #3 that was installed in phase #1 work.

There will be some work required in phase #2 at the existing head house. This work will involve installation of new spouting and probably require a one-day tie in. Presently the spouting will be available about March 11, 1982 (working day 304).

Also in phase #2 work is a new control room which houses control equipment and inspection facilities. Apparently it is desired to get the inspection facilities on line just as rapidly as possible. Therefore, it has been decided to solicit design build proposals for the mechanical, architectural, and structural trades for the building and possibly issue a change order for work to be done on the electrical installation.

It is anticipated we could begin work on the new control room about December 7, 1981 (working day 238). On this date the existing equipment at the new facility area can be relocated and the existing concrete slabs demolished. Construction of the building up through close in should be complete about January 12, 1982 (working day 262). It is important to remember that a new furnace must be installed in the existing office. It is preferable to get this furnace in while the weather is reasonably warm and so installation should be complete no later than November 16, 1981 (working day 224).

Once the control room slab on grade is complete, following close in, the control room rough and finish interior work can be installed to make the rooms ready for the control processor and other equipment. Also, when finish work is complete the grain inspection area can be occupied.

Another activity to be done at the control room is to tie in the new control room area to motor control center #3 and terminate it. The control room must also be tied to the

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scale tower system after which the new scale system can be tested. Presently it appears that this systems test might be possible by about August 30, 1982 (working day 424).

There was no word at our session as to when the control processor or the control terminal panels would be delivered to the job site. However, it is anticipated that these will be available prior to completion of phase #2 and making the system operational.

To complete our planning work today, we diagrammed installation of the new reversible C-14 drawoff conveyor. Installation can begin once the scale tower is complete and bins #13 through #20, #22, and #24 have been emptied. While the existing C-14 conveyor gates and spouting is being removed the plant staff will be refurbishing and reinstalling spouting as required. New gates will be then set and the new conveyor put in place. Next, the loaders will be reworked and installed. Probably the shutdown for this work which will be a selective shutdown will require about 15 working days starting near May 5, 1982 (working day 343) and finishing up on May 26, 1982 (working day 358).

Mr. Weis retained the rough network tracings dated November 2, 1981 (working day 214). He will make prints of these and distribute to those requiring them. The tracings will be retained in his files.

I shall be in touch with Mr. Weis shortly to determine the needs for future planning and to set the next monitoring and planning date in mid or late January, 1982.

Ralph J. Stephenson, P.E.

RJS:sps

TO: Mr. Bruce Weis

cc: Mr. Don Biorn

RALPH J. STEPHENSON, P.E.
CONSULTING ENGINEER

March 1, 1982

Subject: Monitoring Report #4

Council Bluffs Elevator Expansion

Council Bluffs, Iowa

Cargill, Inc.

Project: 81:26

Date of Monitoring: February 23, 1982 (working day 292)

Monitored from Issue #3, dated November 2, 1981 (working day 214)

Target completion date: approximately September 16, 1982 (working day 436) (to be checked and confirmed)

Actions taken:

- Monitored current status of phase #1 and phase #2 work
- Reviewed entire phase #2 operations with project team
- Prepared network model for phase #2 work - Issue #4, sheets 9, 10, and 11 dated February 23, 1982 (working day 292)

Those attending the meeting were:

Bud Smith, Cargill CMD
Bob Thomas, Cargill Grain Lab
Bruce Weis, Cargill CMD
Dennis Jones, Cargill CMD
Dave Muilenburg, Cargill Grain Lab
Merle Hansen, Cargill Council Bluffs, Iowa
Bill Pickering, L.P.W. Inc.
Steve Palmer, L.P.W. Inc.
Carl Lind, Cargill CMD
Wayne David, Cargill Kansas City
Sharon Ensminger, Cargill CMD
Glenn Wondra, Cargill Grain Lab

Phase #1 work

Phase #1 work is within eight to ten working days of being totally complete. This brings the finish date to about March 9, 1982 (working day 302). The target end date was January 14, 1982 (working day 264). Therefore, there will be a lag of about 38 working days in the

project completion date to start of final testing. The lags were caused by various impacts with one of the prime causes the excessively harsh winter experienced in Council Bluffs.

Most of our efforts at today's phase #1 session were focused on identifying the areas in phase #1 that must be given continuing attention after which we concentrated on the work to be done in phase #2.

Phase #2 work

The structures and machinery contractor was present at the meeting today and contributed very much to the planning work that was accomplished. Our major thrust was to identify all that had to be done in phase #2 including structures and machinery work, electrical work, work by Cargill along with all other activities needed to bring the rail loadout system on line.

Field operations have started for the scale tower pit, and mass excavation is under way with base mat concrete work to start shortly. Present plans are to complete the scale tower pit walls, waterproof and backfill by April 26, 1982 (working day 336). There is considerable work to be done on the pit and it is a critical facility element.

The scale tower will start up on April 26, 1982 (working day 336) with lift #1 structural steel. The sequence for this work can be found on sheets #7 and #8, Issue #4, dated February 23, 1982 (working day 292). It is anticipated that by June 11, 1982 (working day 369) steel for lift #3 will be completed. In addition, the weigh hoppers, upper garner hoppers, scalpers, cleaners, upper surge and connections to the existing L-5 tower will also be erected.

Concurrently with erecting lift #3 of the structural steel, valves and spouting will be installed in the scale tower to the various pieces of equipment. Upon completion of structural steel the concrete deck at elevation 1088' will be constructed and after that metal sheeting on the west side of the tower will be installed. After west sheeting, the L-6 leg, L-7 leg, C-20 conveyor, C-21 conveyor, and C-19 conveyors will be put in place following which the scale tower steel and machinery will be painted.

It was decided at the session to consider installing the manlift as early as possible to allow for use by contracting forces. It was felt by the structures and machinery contractor that much time and effort would be saved by improvement in productivity by having the lift available.

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CONSULTING ENGINEER

Once the tower valve and spouting work has been partially installed the air and hydraulic systems can be started.

At the rail shed, modification of the old duct duct system along with reinforcement of the steel columns is the first activity followed by erection of perimeter steel and installation of conveyor C-22 supports. Conveyor C-22 can then be put in place.

At the rail loadout, the new control cab can be installed when supports are erected for it.

At the conveyor C-14 care must be taken to insure that the drive support steel in the scale tower pit is installed promptly since it will be necessary to feed this drive out of motor control center #3a. The sequence is shown on sheet #7, Issue #4, dated February 23, 1982 (working day 292) in the scale tower and drawoff sequence. The logic shown there should be watched carefully since it is a potentially critical area involving emptying bins #13 through #20 and #22 and #24, refurbishing the spouting and gates as required and then refilling the bins on a one by one basis. At some point in time, it will be necessary to shut down the shipping leg (SL) to install the bypass spout M-38. At present this appears to be a task with considerable float time, and no major concerns are presently felt regarding the sequencing shown on sheet #8.

The major structures and machinery activities shown on sheets #7 and #8, Issue #4, dated February 23, 1982 (working day 292) were derived from the structures and machinery contractor's network model and schedule. Some modifications were needed as activities not under his control were inserted into the logic system. However, agreement was reached by all concerned that the logic on sheets #7, #8 and #9 are appropriate as of this point in time. All parties affected by these schedules and plans will review the models and confirm that the logic, the sequence, and the durations are appropriate. Mr. Weis will distribute the networks to those involved.

Sheet #9 of the network model Issue #4, dated February 23, 1982 (working day 292) shows major electrical work and startup of the new system. This is a very important plan of operations and care was taken to include all major activities. The installation of each set of electrical conduit is followed generally by wire pulling and termination.

RALPH J. STEPHENSON, P.E.
CONSULTING ENGINEER

Motor control center #3b is a very important piece of equipment since it is the starting point for much of the wiring to be used in phase #2. This motor control center is due to be delivered to the job site by June 2, 1982 (working day 362) and set immediately. There are several related control items to be provided by the grain lab and care was taken to show each of these in their proper position in the logic sequence. Those elements to be provided include control processors 11-23 and 11-34 and the termination panel at the control center. To be watched are the plant shutdowns required when wire has been pulled from the motor control centers to the control center and IO panel and it is an appropriate time to terminate at motor control center #1. For this tie in, the full plant will probably have to be shut down. When wire has been pulled from the motor control center #3b to the motor control center #3 distribution the new truck dump operation will have to be shut down to complete terminations. There may be other miscellaneous areas that will require full or partial plant shutdown, and I recommend that these be identified early and planning be done for all outages just as quickly as possible.

At the scale tower it is intended to install conduit and pull wire as quickly as the tower is available, possibly with an early start of June 18, 1982 (working day 374). Electrical work will proceed at the scale tower as the various equipment is installed. Once all wire has been pulled and the terminations made, a partial startup of the new systems will be initiated. It presently appears this partial startup could begin as early as August 27, 1982 (working day 423). Following the partial startup the scale system can be tested and certified. Concurrently remaining system startups will go ahead with the turnover to the plant presently anticipated at about September 16, 1982 (working day 436).

It should be cautioned that this is a preliminary analysis and that the entire project group will be reviewing the logic, sequences, and durations for the model over the next few days. After this review, any changes required will be evaluated and the final targets established for startup operation.

Mr. Weis provided me with copies of sheet R-1, 7, 8, and 9, Issue #4, dated February 23, 1982 (working day 292) for preparation of this monitoring report. He will provide all other members of the project team a full set of networks so they can make their review. It should be noted that the previous phase #2 network models shown on sheets #4, #5, and #6, Issue #3, dated November 2, 1981 (working day 214) are replaced by the sheets prepared today, #7, #8, and #9.

RALPH J. STEPHENSON, P.E.
CONSULTING ENGINEER

Copies of this report are being sent direct to Mr. Robert Thomas at the Grain Lab and Mr. Dennis Jones at the Cargill field office.

We have now completed the major phase #2 planning, and I shall wait to hear from Mr. Weis in respect to further work on the project.

Ralph J. Stephenson, P.E.

To: Mr. Bruce Weis

cc: Mr. Don Biorn
Mr. Robert Thomas
Mr. Dennis Jones