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81:31  
Strand

RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER

September 1, 1981

PRELIMINARY DESCRIPTION OF  
FUNCTIONS TO BE HOUSED AT  
LIVONIA FACILITY

The functional descriptions below were formulated with Bob Hedke and Dave Knight on August 28, 1981, as the matrix for density definition was being prepared. The descriptions are to help in reducing to explicit statements, what each major activity to be housed at the Livonia facility should do, how it should look, and how it is to interrelate with other company functions at Livonia and at the manufacturing facilities.

Manufacturing (MFG)

This space houses the staff in charge of manufacturing operations for all facilities of the Strand Company.

Most of manufacturing's input and output concerns communications to and from the remote manufacturing operations. There is a close relation between manufacturing, the executive office staff, the controller, project managers, purchasing, and EDP (electronic data processing). The function must be serviced with communications equipment that will allow the manufacturing staff to maintain close contact with all operations

Education and Training  
(E & T)

in the manufacturing facilities. It is felt that education and training will play an increasingly important role in the company's future. Education and training facilities will be used particularly by engineering, the service division and personnel to provide both new employees, and present staff members the opportunity to learn on an ongoing basis about the business Strand is in, how it functions now, and is expected to function in the future.

Service Areas (SVA)

Service areas are storage spaces, toilet rooms, stairways, corridors, loading, receiving, vending, copying, blueprinting, elevator and equipment rooms, lunch areas, and all other such functional units in the building. No close definition has yet been attempted as to how this space relates to major departments.

Sales and Marketing (SMK)

Sales and marketing houses the forerunner effort of obtaining new and repeat business. Here, a close physical tie is essential to customer and prospect conference rooms as well

as to proposal engineering and audio visual.

The entire sales staff will be housed in the sales and marketing area, along with the sales manager. Probably the executive in charge of sales and marketing will be housed in the executive offices for ease of access to the operating management of the company.

Visitor Reception (VIR)

The visitor, reception area has to be carefully placed, since it is here that all people not working for Strand will come initially for direction and information about the company and the personnel whom they wish to visit. In all likelihood, a separate employee entrance will be provided, and if the personnel load becomes heavy, it is also possible a separate employment reception will be incorporated into the plan. For the time being, however, we will assume that the visitor reception area is for vendors, prospects, customers, and all others who visit Strand.

Engineering (ENG)

Engineering is a critical, first exposure operation once a job has been obtained. It should be kept in

mind, as we have discussed so frequently, that funds are committed during the engineering process, and subsequent to that are merely expended. As such, engineering which contains the technical design group, along with drafting, blueprinting and copying facilities, and the other related visual operations (certainly cadesam) will have to be accommodated in the area.

Engineering appears to have high relational densities with the controller, project management, library, and purchasing. In addition, they must have good access to manufacturing, and education and training functions.

Executive Offices (EXO)

The executive offices house the chief operating managers of the company, and as such, represent the managerial nerve center for the Strand organization. To be housed here is the president and the administrative and operating officers including those for manufacturing, marketing, corporate development, finance, engineering, and such other as may be added in the future. In addition,

secretarial support functions will have space provided in this area of the building.

Customer Conference (CCF) Customer conference rooms will be used to confer with clients about their programs. As such, it should be in close proximity to the project management areas, sales and marketing, and the visitor reception area.

Prospect Conference (PCF) Prospect conference is similar to customer conference except that its primary use will be for prospects being converted to customers. As such, it should be close to the audio visual area, directly accessible to sales and marketing, and to some extent for multipurpose use, the customer conference facilities.

The idea of multi-purpose space leads us to believe that there may be a need for a board of directors meeting room. It may be that the conference facilities being provided for prospects and customers could double as a board room.

Controller (CON) The controller function has a close tie to manufacturing, engineering, the executive offices, project management, and, to a lesser extent, the other functional operations. The concept of

the controller is that he will exert a control function on the entire Strand operation. As such, the controller space should be in a location so it can be responsive to needs for data and information required to exert and maintain active controls at all levels of management.

Working Conference (WCF)

It is anticipated that working conference areas will be heavily used by engineering, project management, and other day-in and day-out activity centers that require meetings within the company. These rooms should be comfortable, of varying sizes, and should be outfitted with adequate communications equipment.

I should like to inject a caution that working conference rooms should be designed so minimal disruption to ongoing discussions is encountered. For example, I strongly suggest that telephone and other external access machinery not be put in a working conference area, unless there is a direct functional need for such equipment applicable to the kind of work being

done in that conference room.

It is entirely possible that phone jacks could be installed in rooms and selective use of communications equipment made whenever appropriate.

Project Management (PRM)

The project management function will become increasingly important in the future of the Strand Company.

Therefore, a close working relationship will probably exist with manufacturing, engineering, executive offices, customer conference areas, controller, and working conference areas, along with occasional involvement with other functional operations within the office. Project management offices should contain adequate record keeping space and technical representation reference room. Technical representation is gained through working drawings, models, mock-ups, and other such physical representations of the products manufactured by Strand.

Service Division (SVD)

The service division is slated for considerable expansion of activity in the future as aggressive marketing to obtain service contracts and provide fast

turnaround on servicing to existing units is brought into the Company's marketing and sales plan. In addition, the service division must continue to respond during the warranty period to the needs of Strand customers.

It is expected that the service division will take on a greater role in the replacement parts operation over the years, so that the Strand unit in the post contract period will be totally served by the Strand organization on through and beyond the next sale to the customer. Thus, the service division will ultimately be a critical link between each Strand post contract operation, will set the path that leads into the next customer contract on that particular installation or related installations.

Library (LIB)

The library facility is for the entire organization, but most particularly is expected to serve engineering, purchasing, and proposal engineering. As such, it will be a reference library, as well as housing publications originated within the Strand organization.



Purchasing (PUR)

Purchasing will have close density ties to manufacturing, the visitor reception areas, engineering, library, proposal engineering, and to a slightly less intense degree, project management.

Vendor Conference (VCF)

Vendor conference areas are primarily to allow Strand vendors to enter the building easily and with a minimum of other visitor interference, and to get quickly to where they have to go and to be able to meet easily, and only, with Strand personnel that are of importance to their particular needs.

An interaction is seen at particularly high levels with visitor reception, purchasing, and proposal engineering. Vendor conference should be considered a high security area of the building, since, of course, this is where many of the contract arrangements are put into usable form.

Proposal Engineering (PRE)

The proposal engineering function is to convert a Strand concept or a customer concept (or sometimes both) into a cost at which that particular product can be manufactured, delivered, installed, and operated. As such, it has an important

relation with sales and marketing, and also is closely tied to functions such as engineering and purchasing which must follow its efforts once the job is obtained.

Proposal engineering should have library facilities close by.

Personnel (PER)

The personnel department at Livonia will probably be concerned only with hiring for the Livonia facility. It is presently expected that most plant hiring will be done at the plant. Thus, the Livonia personnel function is to be relatively modest, maintaining close communications with visitor reception, and to some extent, with education and training.

As noted above, there is some discussion about providing a separate personnel entrance into the building where screening, testing, and interviewing of job applicants can be done outside of the main stream of the normal visitor traffic to the office.

Communications (COM)

The communications area is difficult to describe since the product of communications goes to various terminal devices throughout the building.

However, within communications will be housed such items as the switchboard, the equipment for video links, radio communication facilities, and perhaps to some extent, the cadcam or computerized drafting equipment. The use of computer aided drafting must be studied in great depth, because the use of cadcam is a new and constantly changing, technical art; therefore, it's exact relation to what we are calling communications must be studied on an ongoing basis.

Audio Visual (AVI)

The audio visual group will be responsible for preparing slides, graphics, presentations, brochures, photographs, and all other such material that is such where an appeal to the eyes, ears, and emotions is involved. The area should contain adequate storage space, and will probably have to have well equipped workrooms, possibly including such elements as a studio, slide library, dark room, graphics, and drafting area, and reproduction equipment. It should be close to the conference areas, particularly the prospect and customer

conference rooms, so its product can be quickly and easily transferred to these presentation areas.

In addition, audio visual staff would be in charge of maintaining and operating all special equipment such as overhead projectors, transparency projectors, slide projectors, opaque projectors, screens, speaker equipment, and other elements of a good audio visual system. High communication densities will be maintained by the audio visual group with sales and marketing so the AVI resources are quickly and easily in sales and marketing situations.

Electronic Data  
Processing (EDP)

Here is centered the actual EDP processing unit and the support staff needed to operate it. Probably the officer in charge of data processing will be located in the executive office area.

To be housed within the data processing will be a data processing manager along with programmers and processing technicians. Interaction is probably heavy with only a few of the operating departments.

Page thirteen

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CONSULTING ENGINEER

We will continue updating the above functional descriptions  
as part of the planning and programming process.

Ralph J. Stephenson, P.E.

RJS:sps

October 12, 1981

Subject: Monitoring Report #1  
Strand Building Expansion

Project: 81.31

Date of Monitoring: October 7, 1981 (working day 196)

Monitored from Issue #2, dated September 4, 1981 (working day 174)

Actions taken:

- Monitored current status of project front end work with Mr. Dave Knight
- Reviewed zoning ordinance for City of Livonia
- Inspected site
- Reviewed project progress with Mr. Robert Hedke
- Discussed interim facility plan for Petersburg
- Reviewed approach to financing plan with Mr. Hedke and Mr. Knight

General Summary

Currently work on the project is primarily geared to developing adequate information to conduct the first management review session (MRM-1) by November 5, 1981 (working day 217). At this management review session the intent is to discuss the following items:

- Preliminary area analyses for Livonia and Petersburg
- Program questionnaire for Livonia
- Preliminary physical expansion plans for Petersburg
- Preliminary functional descriptions for Livonia
- Site characteristics and zoning for Livonia
- Preliminary budget and financing plan for Livonia and Petersburg
- Possible design and construction approaches for Livonia and Petersburg

- Interim facility plan for Petersburg

There may be other items evolve from our discussions to be placed on the agenda of the MRM-1 session. Therefore, a final agenda will be published just prior to the meeting to all concerned.

The management review staff consists of Bob Strand, Bob Hedke, Dave Knight, Pat Doman, and Murray Strand. This group will be requested to be involved in specific management review functions periodically throughout the programming, design, construction, and occupancy phases of the Petersburg and Livonia expansion.

In preparation for today's session we first monitored the current status of our work plan. Presently, the project organization has been established and functional descriptions for Livonia along with a preliminary plan of action for Livonia and Petersburg have been established. We still have yet to complete the full preliminary area analyses for Livonia and Petersburg. These will be done on a rough basis so as to be able to confirm preliminary budget estimates along with the finance plan to be used as a starting point in acquisition of funds for the project. Final area allocations, of course, will not be made until we are able to more fully review needs with the various functional heads through the use of the program questionnaire.

Lagging our present plan of action is establishment of a preliminary three to five year physical expansion plan for Petersburg. Work must be done on this in the very near future so we can identify how the entire Petersburg program interacts with the new Livonia facility. At present we are considering that Livonia and Petersburg are two facilities having very close functional relations to each other. Our concept is to consider that they both are an integral part of the entire Strand operation and as such must mesh properly and must be mutually compatible.

Preliminary discussions indicate that a present course of action that would be operable as an interim facility plan at Petersburg would be to somehow provide temporary space for overflow personnel needs. It also is desirable to get the foremen who now meet and operate out of the office space out on the plant floor and working from stations in the plan. The present plan is to provide small shelter areas on the floor where the foremen have desk space, probably a phone and some privacy in which they can do the paperwork now being done back in the office space. This additional floor room could be supplemented through any one of several plans.

In detailed discussions today it was generally agreed to further review provision of needed additional space using work office trailers, probably 11'-6" x 56', and locating these adjoining the plant office on the outside.

Trailers today are remarkably efficient, comfortable structures and are relatively inexpensive. Rough plans for such a facility will be prepared and will be discussed with the plant management to determine their ideas toward such an approach. Discussions should result in designs and construction of suitable interim facilities agreed to by all concerned. It is my opinion, and I expressed this as a personal and professional opinion, at our session, that plans for a new permanent office structure should be deferred until we have a better grasp and understanding of the actual physical expansion desired for Petersburg in the next three, five, and ten year periods. In addition, I feel that because of the current fluid nature of the Petersburg operation, it would be far better to provide interim facilities capable of being tested at the site in terms of space allocation and function than to make a full scale capital expenditure now for new fixed facilities.

This particular analysis and discussion required a fair amount of time at our session and as a result we were not able to work fully on the other priority business of completing preparation of a program questionnaire. The program questionnaire is to be prepared to obtain needed input from the various functional groups within the Strand organization to identify their requirements and desires. A similar approach will be used in Petersburg after we have made some trial runs on the Livonia operation questionnaire.

This program questionnaire will contain requests for information from each department manager relative to its function, activities, and responsibilities and will request that the space characteristics needed to carry out this function be identified. Several other questions will be asked in reference to equipment, projected personnel numbers, flexibility requirements, special HVAC needs, humidity needs, plumbing requirements, power demands, and other such physical characteristics. It is intended to present this questionnaire to the department heads in a questionnaire briefing after which time will be allocated for them to prepare and return the questionnaires and for the project team then to prepare a preliminary analysis and write the early program. It is hoped to have this preliminary program work completed by mid or late December, 1981 after which the full program analysis will evolve followed by management review meeting #2. This second meeting will be a very important session at which we intend to present the full program and the plans for how to proceed into the design and construction stages.



Presently Mr. Knight and I have prepared certain portions of the program questionnaire. He will complete a rough draft of it for our next project work meeting to be held on Friday, October 16, 1981 (working day 203). Of critical importance in the work we are presently doing, particularly in respect to Petersburg, is the recent firming up of certain Strand internal managerial responsibilities. We discussed these in some depth and presently it appears they will provide a positive contribution to moving the program ahead in a studied and orderly manner. The sharpening of focus should also allow those responsible managers who are concerned about the expansion program, and how it is prepared, to provide good input into the planning work.

A review of the Livonia site zoning and the characteristics of facility needs under this zoning was accomplished on a summary basis and will be carried out in more detail as time permits. The site is presently about 7.8 acres and is zoned M-1 or light manufacturing. In this respect most uses that would be carried out within the interior and exterior of the planned Strand facility are allowed. We have reviewed the height limitations and special conditions in respect to landscaping, noise and light, protective wall requirements, yards and setbacks, minimum industrial performance standards, parking needs and overall city requirements for various elements of the project. Mr. Knight and I, as part of our meeting, inspected the site and a few observations pertinent in respect to its present condition are given below.

- Most of the trees are being removed by unknown parties who cut them down without regard to the posting of the site. There are a few good trees left. Unfortunately these are not all on areas of the site best for use as future shade or feature landscaping. It would be a good idea if trees are to be saved that the site be inspected and those trees to be retained marked and protected. Protection of trees, however, may be difficult because presently the site is unfenced at both ends.
- The storm drainage ditch which runs through the middle of the site east and west and then turns south and enters the property to the south is a deep gully and probably runs full when the weather is wet. At present the ditch is blocked at the south end. I gather this is being done in order to complete the connections at the new storm sewer being built on the property to the south by Trerice Development Co. This sewer is about complete and the block should be able to be removed shortly.

- A review of soil borings available indicates that the water table is fairly high on the site. This could be a source of trouble, and we should further investigate buildings in the area to see whether or not they have basements and water problems. Presently it would appear that if the water table is at the level that seems to be indicated, basement construction might not necessarily be appropriate. This could be important in setting of the size and ground coverage of the facility.
- Construction of a new wall bearing building on the southwest property adjoining the Strand site is in work. This project probably will be closed in by late fall or early winter, 1981 and should be in operation by late spring or early summer of next year perhaps even sooner. Thus, our site will soon be completely bounded by existing structures and improved properties.
- An inspection of the Observer's parking lot indicates that the entire area drains by a combination of sheet draining and underground storm line to the point where it empties onto the Strand site. I recommend we investigate the need for the Observer area to drain through our site and the legal ramifications of us having to maintain an unobstructed drain through our property.
- It has been suggested by Mr. Knight, and should be considered, that we investigate fencing in the site with either a permanent or an interim fence to protect the site from intruders. This matter should be taken under consideration at an early point in time.

Our next meeting is set, as noted above, for Friday, October 16, 1981 (working day 203). At that meeting, Mr. Knight and I shall concentrate heavily upon the program questionnaire and the area allocations. In addition, we will plan to prepare a project directory that will incorporate key data about the program in an easily referenceable source document. This document will then be distributed to the management review group for additions as the project proceeds and for their reference in the near future.

I should like to again note that of prime importance now is early consideration of the physical expansion desired at Petersburg. This is beginning to prove a very critical pivot question in respect to how we house the collateral facilities at Petersburg in respect to Livonia. We should continue to address this matter, and it should be an

Monitoring Report #1  
Strand Building Expansion  
Page six

RALPH J. STEPHENSON, P. E.  
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important item to discuss at the MRM-#1. Its' discussion at this session should be structured by recommendations from us and information we have gathered prior to the session so that specific conclusions can be reached and decisions made by the management review staff.

Ralph J. Stephenson, P.E.

RJS:sps

To: Mr. Dave Knight

cc: Mr. Robert Strand  
Mr. Robert Hedke

October 20, 1981

Subject: Monitoring Report #2

Strand Building Expansion

Project: 81:31

Date of Monitoring: October 16, 1981 (working day 203)

Monitored from Issue #2, dated September 4, 1981 (working day 174)

Actions taken:

- Reviewed method of presenting material at management review session November 5, 1981 (working day 217)
- Substantially completed setting content of program questionnaire
- Reviewed area analysis for Livonia
- Prepared descriptions of functional positions within departments for Livonia
- Began review of design and construction approaches for Livonia
- Briefly discussed space analysis for Petersburg

General Summary

Our main thrust of work today was to prepare for the first management review session (MRM-1) to be held on November 5, 1981 (working day 217). It is the intent to present the material in a loose leaf binder and provide each member of the management review committee a copy for his reference and future inclusion of pertinent documents.

One of the more important of the items to be discussed at this management review meeting will be the Livonia program questionnaire. Therefore, we concentrated heavily upon that and prepared a rough questionnaire draft which will be put into final form by Dave Knight. In this questionnaire we have requested material about the following:

- Departmental functions, activities, and responsibilities
- Personnel projection for the next 3, 5, and 10 year periods

- Types of space required
- Characteristics of space to be occupied
- Special interrelationships that may exist with other departments
- Suggestions for characteristics to be incorporated in future facilities of the Strand Company to enhance the company's profitability and image

It is the intent to thoroughly brief department heads on this questionnaire prior to their providing the information. At this briefing we will encourage as many innovative ideas to be presented as possible to complement the pure statistical and factual data needed to design the space. Time limits will be set on return of the information so we are able to meet our current deadline of having the information back in our hands by December 3, 1981 (working day 236). When the questionnaires are returned we will complete a preliminary analysis of the material and prepare necessary summaries to conduct management review session #2 on January 11, 1982 (working day 261).

The next item reviewed in our meeting today was to check out the size projected for the Livonia facility. To do this, we obtained from Al Fucinari, copies of his area tabulations prepared for the Hillview remodeling. We then made a count of the work stations in each of the major areas at Hillview and determined the approximate square footage per work station that presently exists. According to this survey there are about 15,360 square feet at the Hillview office containing 82 work stations for an average of 187 square feet per work station. The Hillview space analysis did not include many of the space types planned for the Livonia facility such as mechanical equipment rooms, audio visual, communications, vendor conference, prospect conference, library, loading and unloading, education and training, and others.

Incorporating these additional areas into the Livonia analysis it appears we would be wise to use between 250-300 square feet per person in planning for the five year facility at Livonia. Projecting about 140 people within five years gives us a total area of about 35,242 square feet. For preliminary site use we then assumed a building of one story approximately square and according to setback requirements with a front yard of at least 50 feet and side

yards of the area between the east and west elevations of the building and the edge of the property. Incorporating southerly parking requirements (allowing for about 200 spaces) and the setback needs gives us a combined land use of approximately 200,000 square feet on a site size of nearly 333,000 square feet.

Thus, it presently appears the site can comfortably accommodate a one story facility within the constraints presently identified. However, it is to be stressed that the drainage ditch through the middle of the site must be re-routed or discontinued in order to provide a well planned site and building.

In our preliminary evaluations we have generally assumed figures and conditions similar to those restated above. However, it would be wise to periodically check all assumptions as we proceed with the programming to insure that the project remains feasible within the real estate boundaries established for us.

We also spent a short time this afternoon discussing the method by which we will proceed into the design and construction of the facility. It was expressed by Mr. Knight, and I agree, that we should carry our internal programming on through to where the facility characteristics have been thoroughly thought through and explicitly stated. Once we are ready to release the program to the outside for further work decisions will have to have been made regarding the design and construction procedure. Irrespective of how the various tasks are allocated there are still phases of the work that must be done by certain qualified individuals. Design of the project and preparation of contract documents will have to be done by a registered architect and engineer. Construction of the facility should be done by competent, well respected contractors and suppliers and management of the program will still have to be maintained from the Strand side of the project. No major decisions were reached in our discussions, but I shall study this matter thoroughly and be prepared at the management review meeting on November 5, 1981 (working day 217) to present the various plans by which we might proceed and what the features of each are.

I would like to suggest that specific direction result from the meeting on November 5, 1981 (working day 217) so we can proceed with confidence across the interval to the next management review session.

A brief review was made of the Petersburg program with Mr. Hedke. It was decided that we will proceed with implementation of the temporary office space program at

Monitoring Report #2  
Strand Building Expansion  
Page four

RALPH J. STEPHENSON, P. E.  
CONSULTING ENGINEER

Petersburg with the eye of having it in place and operative by mid or late November, 1981. It is essential that we get this work completed by the onset of cold weather so we are not installing the temporary office during winter. Mr. Knight will follow this immediately and see that the interim program is carried out as we have discussed.

The Petersburg expansion planning requires that a space use analysis be made for the present plant operation. This is difficult to have accomplished since everybody within Strand is extremely busy working on the prime product of the organization. Therefore, once we have had the management review meeting in early November, 1981 Mr. Knight and I will focus our full attention on this Petersburg space analysis. From that analysis we should be able to prepare recommendations for the ultimate expansion of Petersburg over the next three, five, and ten year periods.

It is the intent to provide a pre-meeting agenda to the group that will attend the management review meeting. Mr. Knight and I are meeting the week before and will formulate this agenda for distribution. Every effort will be made to structure the meeting so that there is adequate time to discuss each of the items presented. We would like to insure that the meeting results in specific approvals on courses of action to be taken and explicit direction relative to the material and ideas presented. We are presently planning for a full morning of work, but the meeting could take longer or shorter depending upon how well the material is presented, understood, and accepted.

Ralph J. Stephenson, P.E.

RJS:sps

To: Mr. Dave Knight  
cc: Mr. Robert Strand  
Mr. Robert Hedke

November 20, 1981

Subject: Monitoring Report #3  
Strand Building Expansion

Project: 81:31

Dates of Monitoring: November 5, 1981 (working day 217) and  
November 11, 1981 (working day 221)

Monitored from Issue #2 network model, dated September 4, 1981  
(working day 174)

Actions taken:

- Reviewed full Livonia and Petersburg building program with staff including Mr. Robert Strand, Mr. Robert Hedke, Mr. Murray Strand, Mr. Pat Doman, and Mr. Dave Knight
- Presented Livonia project details to department head group
- Distributed program questionnaires and reviewed content with department heads

General Summary

On November 5, 1981 (working day 217) Mr. Knight and I met with Mr. Robert Strand, Mr. Robert Hedke, Mr. Murray Strand, and Mr. Pat Doman to discuss the Livonia and Petersburg building expansion program work to date. The objective of the meeting was to gain approval for distribution of the Livonia questionnaire to department heads. Most of the elements discussed were basic review since a large share of the material had been formulated in conjunction with several of those present earlier. Approval was given to proceed with distribution of the questionnaire, and it was decided that the department head meeting would be held November 11, 1981 (working day 221) at the Hillview office.

It should be noted here that the next management review session is to be held January 11, 12, or 13, 1982 (working day 26, 262 or 263). At this meeting a full evaluation will be made of the material obtained from the questionnaires and approval given of the preliminary program. This program is to be prepared after the questionnaires have been returned and analyzed.

The program will generally contain the following items:



Monitoring Report #3  
Strand Building Expansion  
Page two

- Desired budget and financial targets
- Financial density analysis
- Preliminary space sizing
- Recommendations regarding design, construction and maintenance of the facility
- Recommendations regarding procedures to be followed in manufacturing facilities expansion
- Full description of the various types of space needed
- Model of procedures to be followed subsequent to management review session #2

Notice that the Petersburg and other Strand manufacturing expansion plans will also be up for discussion at MRM-#2. The reason for their inclusion is that we have agreed that Petersburg and other manufacturing facilities must be considered concurrently with the planning being done for the Livonia nerve center. It is important that we bring the two branches of the program along with each other. We shall discuss this matter in more detail as work proceeds over the next month and a half in analyzing the questionnaires and beginning active work on the manufacturing function future plan.

On November 11, 1981 (working day 221) Mr. Knight and I met with executive staff members and department heads to review the program to date and present the questionnaire that is to form the basis of further Livonia planning. The following people attended the session (list is in random order):

Jerry Apel  
Jack Boldt  
Rod Brandt  
Pat Doman  
Doug Faulkner  
Al Fucinari  
Bob Hedke  
Dave Knight  
Bob Meadows  
Lee Morin  
Murray Strand  
John Thomas  
Karen Kowalewski  
Tom Gierucki  
Bob Sims  
Lou Brown  
Tom Chanaver  
Lee Thomas  
Joe Mycek

Mr. Pat Doman introduced the subject, stressing the importance of department head participation in planning for the future of the entire Strand organization.

We then moved into a definition of the objectives of the session. These were generally agreed to be as follows:

1. To involve Strand management in the business and physical expansion of the company.
2. To involve Strand management now in shaping future operations of the company.
3. To make fully effective a close operational relation between pre-sale, post-sale, manufacturing and post-manufacturing functions.
4. To obtain adequate data from varying managerial viewpoints to plan the Strand future over the next ten years.
5. To gather adequate, accurate, authentic data about each Strand functions so as to properly plan for the company future.

It should be noted that these objectives as presented move from a general statement in #1 to increasingly detailed statements to #5 where we are speaking specifically about the questionnaire.

We next reviewed the Livonia site characteristics and presented some of the data regarding the physical nature of the proposed facility. After a few questions and some discussion about the terminology used on the project we proceeded to the questionnaire itself.

Each department head was provided a copy of the questionnaire, and it was reviewed in detail allowing time for questions and conversation about each point as the material was considered. It was emphasized in the session review that the deadline for return of questionnaires is December 2, 1981 (working day 236). There will then be made a preliminary analysis of the information over the next 10 working days during which time we will probably discuss some of the information provided directly with various department heads.

It is our present intent to follow progress on questionnaire preparation closely so that the December 2, 1981 deadline is met. This should then allow us adequate time to work with the questionnaires prior to our next management review session in mid-January, 1982.

Following the questionnaire session Mr. Knight and I met and continued our work on the total program. I recommended we proceed immediately to initiate similar activities to Livonia for the manufacturing expansion planning. Our first step was to work on preliminary descriptions of the functions to be housed at Strand manufacturing facilities. It is fully recognized by both Mr. Knight and I that definition of functions at Petersburg is a difficult and sensitive job, the results of which must be reviewed carefully by top management. Therefore, the descriptions below have been double spaced to allow annotation and comments by top management for our next planning session. At this session we should further refine these definitions so that each individual working on the program is aware of the current thinking about functions to be housed in Strand manufacturing plants.

It would be appreciated if all members of the executive staff would study the functional descriptions and be able to comment positively on these. The descriptions follow the pattern of information shown on sheet P-1, Issue #4, dated September 4, 1981 (working day 174).

Preliminary description of functions to be housed at Strand Manufacturing Facilities

The functional descriptions below were formulated to provide a discussion base from which we can, over the next several weeks, evolve suitable, authentic descriptions of the functions to be maintained at Strand manufacturing facilities. Discussions of these functions has been on the basis that they are as desired in the future and that suggested changes and revisions to the initial discussion descriptions should also be made on that basis.

Plant engineering (PE)

Encompasses the maintenance, repair, modification, and expansion of physical plant facilities including buildings, grounds, and equipment.

Quality assurance (QA)

A basic description of the function is that it is the activity that insures what you tell a customer he is going to get is actually what he gets. Quality assurance includes

inspecting material and equipment received, maintaining checks on code welding and manufacturing processes, updating abilities of workmen in the plant, and overall monitoring of the quality of the manufacturing process and the product. It also includes gauge and equipment calibration, testing, and maintenance of all records required to track equipment and material.

Production (PP)

This group is responsible for manufacturing and shipping a product of the quality, in the quantity, according to the design, and on the schedule committed, all at the cost estimated.

Manufacturing engineering (M-)

Manufacturing engineering converts product design into documents that allow the plant manufacturing management to use their skills in methods and production techniques to most effectively produce the product within cost restraints.

Product engineering (PG)

Maintains liaison between the engineering staff and the manufacturing staff to assure proper translation of the product design into a finished assembly. Product engineering is responsible for ironing out product design problems as the product is put into production. It is also involved in resolving production problems as they relate to design and maintaining constant feedback of manufacturing information into the design process for use on future product innovation and improvement.

Industrial engineering (IE)

Establishes and helps introduce improved work standards, work flow methods and ways of improving machinery, and labor utilization; brings into operation better material handling methods, and other techniques which concern the dynamic movement of ideas, labor, and materials through the manufacturing process.

Plant supervision (PS)

This staff oversees and manages plant operations through the plant superintendent and his staff of supervisors and support personnel, including clerical and secretarial. The concern of this group is to insure that direct labor assignable to a job is used most effectively.

Manufacturing management (MM)

Manufacturing management is responsible for all plant and manufacturing operations.

Controller (CO)

Exerts control functions on and at all levels of plant and manufacturing operations. Includes monitoring budgets, machinery efficiency, labor efficiency, and all other measurable indicators of company manufacturing performance.

Personnel (PL)

Responsible for personnel interviewing, screening, hiring, dismissing, and all other employee relation activities. Also responsible for safety, medical functions, claims, benefit payments, grievances, and is to participate in labor negotiations.

RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER

Monitoring Report #3  
Strand Building Expansion  
Page seven

Training and education (TE)

has the responsibility to provide new and present employees an opportunity to learn, on an ongoing basis, about the manufacturing operations of Strand.

I shall be in touch with Mr. Knight and Mr. Hedke shortly to set the next staff planning session.

Ralph J. Stephenson, P.E.

RJS:eps

to: Mr. Dave Knight  
cc: Mr. Robert Strand  
Mr. Robert Hedke  
Mr. Pat Doman