

**The Factors Affecting in Delay of TSR Projects
(Case Study: Reconstruction of the official building in Gas Transmission Company)**

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Abstract: Resources that organizations use in the projects such as human resources, finance, materials, energy are the most important and valuable corporate resources and optimal use of these valuable resources and prevent waste in order to achieve targets of organizations provides survival in the global competition. Therefore, for optimal use of resources and avoid wasting them organizations are trying to use project management knowledge and improve their performance in this area. Projects are important in the success of organizations and major part of the budget of organizations allocated to them. If the exploitation of the projects does with delay, despite of wasting assets, some of these projects will lose their economic and technical justification. In this paper, at first steps in a process of a project in transfer gas organization of Iran was studied and analyzed delay causes at each stage. The causes of project delay were identified as (1) Lack of providing budget, (2) several requests from applicant and (3) providing package and some guidelines and recommendations are given to improve the situation. The findings of this study showed that although the main cause of failure is inadequate funding for projects but project management as an important factor should be considered.

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1. Introduction

Region 3 of Gas Transmission Company is working as one of the main gas transfer units in country and as an independent unit under supervision of operation management of Iran national gas company. This organization is attempting in field of gas transfer operation, exploitation and continuous maintenance of high pressure gas pipe lines and gas pressure reinforcement stations according to its charged duty.

Industrial plants and equipment in protection area of this region is included high pressure pipe lines in five cities which have important and constructor role to transfer and deliver consumption gas to the power stations, industrial centers, trading and house units in seven provinces of country according to standards and instructions of Iran national gas company considering the standards requirements of quality management ISO 9001:2000, Environment ISO 14001:1996 and safety and professional health OHSAS 18001:1999.

One of the inseparable and common processes is TSR process in all projects of gas transfer region 3. Although TSR is the first stage and certainly is prerequisite of any project but usually it is a time consumer process. Technical Services Request is a part of region 3 of gas transmission process by which the applicant announces his/her technical need and the request will lead to identify the project and issuing the contract permission in order to take the

confirmation from the authorities and beginning contract commitment processes after expert evaluation and passing various official stages in case of acceptance and final confirmation to perform the request, if the activity capacity is out of special ability and region equipment, Remarkable interval since issuing TSR to project beginning and performance of request is one of the challenges that region 3 of gas transmission operation is faced to it. Issuing processes of technical and expert services request to contract commitment is shown in Appendix 1.

In times of increasing global competition, the success of projects becomes more decisive to an organization's business performance. However, many projects still present delays, changes in their scope failures and, some might be cancelled. (Shenhar, 2001)

One of the realities which is involved in development of projects refers to the fact that projects would not be finished in expected time. In addition to the cost and quality factors of any projects, the time also plays the main role in controlling and planning of projects. In the majority of projects, index of time will be forgotten or not much paid attention. If the projects finished with a little delay to a desired time, the effect of some factors such as inflation will be decreased and as a result the project will a estimated cost will be finished. So why the importance of time from the beginning to the end of the project will not paid much attention is the question which managers and experts

of projects should answer. (Manavazhi and Adhikari, 2002)

Concerns for delays and disruptions are common in almost all projects including linear constructions such as pipeline projects. Due to various inherent complexities in construction projects, delays could be resulting from several reasons (Assaf and Al-Hejji, 2006). However, in most cases the resultant impacts of delays are significantly detrimental, e.g. delays could result in serious time and/or cost overrun issues thereby adversely affecting the contractors, clients and other stakeholders in different degrees (Kaming et al. 1997). Consolidating useful knowledge from related research and lessons from recent projects will be beneficial for rationalized project management such as confirmatory knowledge from structural equation models by Georgy (2008).

In this paper, first definition of project, project management, planning and project control and then some explanations about method of research and data collection, some subjects about previous similar researches, brief introduction of under studying organization and its activity area is presented. After that, TRS performance stages are defined. Then the effective factors on delay of the mentioned process is measured via case study in TSR and performed project at organization subsets and is analyzed via cause and effect diagram and finally considered suggestions are presented in order to optimize the process system.

2. The Review of Related Literature

Lewis (2006) in his research declared that a project is a collection of activities which is done to obtain a special purpose or aim. The projects include activities that must be accomplished in the determined dates with determined costs and quality; necessity for each project success is coincident achievement to all three factors of determined time, cost and quality and exceeding the determined limit by each above mentioned factors can lead to an unsuccessful and uneconomical project.

Kaliba et al. (2009) in their research stated project management is project schedule and direction in determined time, cost and quality frameworks to create its determined results. Project management involves activities of schedule, organization, supervision on accomplishment and its direction and it attempts to deliver the determined and expected results with the previous agreed cost in its correct due date. On the other word: in another study by Huemann et al. (2007), project management is application of science, skills and required tools and techniques in managing the activities process in order to supply the administrators' needs and expectations of project accomplishment. During project performance,

management project uses two powerful arms that are project planning and controlling.

As a definition of planning, Williams (2003) declared planning process is determination of necessary activities sequence and parallelism for performing a project considering necessary time for performing each activity and determined quality for that activity.

Project control has been explained in a research by Kannan and Boie (2003) as a process to continue a project direction in order to obtain an excused economical equilibrium between three factors: cost, time and quality during project operation that applies its special tools and techniques in performing this important subject. In deed controlling, exact and perfect performance of a compiled plan for a project so that while exciting the project, it can be came back to its initial and main direction easily recognizing reasons and designing the most economical activities.

Williams (2003) in his studies mentioned that Delay in the delivery of materials and equipment to construction sites is often thought of as a contributory cause of cost overruns in construction projects in developing countries. He founded the main causes of material and equipment procurement delay were found to be (in rank order) organizational weaknesses, suppliers' defaults, governmental regulations and transportation delays. However, the actual impact of these delays on project costs was found to be on average, only about 0.5% of the total budgeted cost of the projects. And Doloi et al. (2012) in his research identified the key factors impacting delay in Indian construction industry and then established the relationship between the critical attributes for developing prediction models for assessing the impacts of these factors on delay. A questionnaire and personal interviews have formed the basis of this research. Factor analysis and regression modeling were used to examine the significance of the delay factors. From the factor analysis, most critical factors of construction delay were identified as (1) lack of commitment; (2) inefficient site management; (3) poor site coordination; (4) improper planning; (5) lack of clarity in project scope; (6) lack of communication; and (7) substandard contract.

Frimpong et al. (2003) tries to find Causes of delay and cost overruns in construction of groundwater projects in developing countries and the results of his study revealed the main causes of delay and cost overruns included: monthly payment difficulties from agencies; poor contractor management; material procurement; poor technical performances; and escalation of material prices. Hence, effective project planning, controlling and monitoring should be established to enhance project

performance in order to minimize or avoid delay and cost problems in groundwater construction projects.

Asrilhant et al. (2006) worked on success techniques methodology of strategic project management in upper hand industries of English oil and gas. First, they have evaluated success factors of the above mentioned projects and provided some suggestions for success of the above mentioned projects.

Shahin and Jamshidian (2006) have worked on the effective critical factors on project and project management success and failure (CSF). First, they have worked on the previous studies about effective critical factors on project success and then they have continued their work on its relationship and effect on project management and have explained the effective factors on project success seeking the models and techniques to attain a successful project.

Another study by Sambasivan and Soon (2007) identified 10 most important causes of delay from a list of 28 different causes and 6 different effects of delay. Ten most important causes were: (1) contractor's improper planning, (2) contractor's poor site management, (3) inadequate contractor experience, (4) inadequate client's finance and payments for completed work, (5) problems with subcontractors, (6) shortage in material, (7) labor supply, (8) equipment availability and failure, (9) lack of communication between parties, and (10) mistakes during the construction stage. Six main effects of delay were: (1) time over run, (2) cost overrun, (3) disputes, (4) arbitration, (5) litigation, and (6) total abandonment. This study has also established an empirical relationship between each cause and effect.

Sepehri (2006) has explained a quantity model to evaluate the organizational project success in order to make the organizations able to evaluate their performance in the projects. Sepehri has provided a model through comprehensive view on TQM, EFQM, OPM3 and other evaluation models.

Odeh and Battaineh (2002) Results of the survey indicate that contractors and consultants agreed that owner interference, inadequate contractor experience, financing and payments, labor productivity, slow decision making, improper planning, and subcontractors are among the top ten most important factors.

Braimah and Ndekugri (2008) in their research identified eighteen factors through literature review and pilot surveys and then ranked on their relative importance based on data collected in a nation-wide survey of UK construction organizations. Factor analysis was used to reduce the factors into 6 group factors: project characteristics, contractual requirements, characteristics of baseline program, cost

proportionality, timing of the analysis and record availability.

Looking at country automobile resources, Lwise et al. (2009) have attempted to use the discussions scientifically and operatively those which are applying in the mentioned industries for many years in order to recognize and analysis failure factors and to provide the solutions to prevent the failures and improve them. They have attempted to provide suggestion about preventive acts before event for the standstill projects and also they have attempted to provide improvement suggestions for operating projects in order to prevent or reduction of delays in power station projects by case studying in country power station projects and using analysis method of failure factors and its effects (FMEA).

Assaf and Hejji (2006) founded in their research that most common cause of delay identified by all the three parties is "change order". Surveys concluded that 70% of projects experienced time overrun and found that 45 out of 76 projects considered were delayed. And Zwikael et al. (2006) founded in their study that financial difficulties faced by the contractor and too many change orders by the owner are the leading causes of construction delay. Severe weather conditions and changes in government regulations and laws ranked among the least important causes.

Momeni et al. (2006) have provided a relatively simple and useful method for scheduling the multi projects system which includes useful algorithms to prefer, select and optimum budgeting the projects and make the projects able to control scheduling and budgeting program flexibly and dynamically in every time and it can be used in all organizations those which are working on multi projects.

Hamzah et el. (2011) in their research announced Delay can be defined as time overrun or extension of time to complete the project. Construction delay is something that cannot avoided especially in government agencies in Malaysia. Therefore delay is a situation when the actual progress of a construction project is slower than the planned schedule or late completion of the projects.

Momeni et al. (2007) also provided an innovative method to select, prefer and budgeting the projects which was based on work decision process in senior management level of a multi project organization for optimum application of organization resources in order to prevent projects controllable delays and minimize the other delays cost.

3. Method

In this paper, the background information of the under studying organization, processes and their

operation procedure have been extracted by investigation of inside organization documents in region 3 of Gas Transmission Company. Also, information related to case study has been obtained from documents of the mentioned files. Authorities of the related departments and also respectable M.A. Of system analysis department and energy management of region 3 of gas transmission operation were interviewed for final conclusion and analysis.

Some meetings were carried out with experts from "systems analysis department and energy management of region 3 of Gas Transmission Company in order to analyze the obtained information. Last results were obtained applying Brain storming creation method and finally drawing cause and effect diagram or Fish bone.

4. Case Study

4.1. Name of the project

Renovation and reconstruction of the QZN yard official building and saloons and ARS building

Operational specifications and stages of the above project have been extracted in appendix tables 1 and 9. In these tables the necessary investigations were done on all stages and start and termination date of each has been determined.

The sent TSRs in the mentioned project:

1. Technical and expert services request (to progress the official building space)
2. Technical and expert services request (to increase the present official building room-establishment of the kerbs around yard)
3. Technical and expert services request (reconstruction and progression of ARS building)
4. Technical and expert services request (renovation and reconstruction the external surface of maintenance building saloon)

Send contract permits in the mentioned project:

1. contract permit (reconstruction of official operation building of QZN pipe lines)
2. contract permit (reconstruction and progression of the building)
3. contract permit (renovation and reconstruction of QZN operational maintenances saloon building)

According to the performed investigations, some reasons of increase in contract commitment process time of this project are:

1. Several requests from applicants during short intervals toward each other.
2. Lack of budget providing in 2009.
3. Doing over twice on the package and putting the provided packages together.

4.2. Investigation of reasons in delay on the mentioned stages

1. Several requests from applicants during short intervals toward each other: As it was mentioned above, 4 TSR requests with work nature similar to engineering services unit have been sent and even the applicant also has requested for adding some new subjects in contract via a letter dated on 3.9.2010 after finalization of package and synchronized with sending the tender documents to the tenderers. This issue has been led to write letter again and doing over twice from contracts affairs in order to make the tenderers aware.

Complication:

Lack of all aspect investigation and general viewing while sending TSR by the applicant

2. Lack of budget providing in 2009 :

Since budget of contract permit was provided as "reconstruction of official operation building of QZN pipe lines" dated on 5.19.2009, while contract committing of this project by contract affairs department, other contract was done as reconstruction of maintenance saloon and reconstruction of ARS building that because of insufficient budget of contract commitment stages, these two licenses were stopped by budget director and after the three licenses were put together, contract commitment process start permission was issued for contract affairs by region manager in order to determine the contractor at beginning the new year, thus it was assigned that budget of 2010 would be blocked and finally the permission was budget provided in 2.21.2010 from budget 2009.

3. Performed doing over twice on the package and putting together that provided packages :

In this project, after request related to reconstruction of official building dated on 8.14.2008, its package was prepared by engineering services department and the related contract permission was signed by region director in 5.30.2009. Then inquiring and receiving the pockets was done by contract affairs department, but there was a problem in this issue by accountancy (that the contracts are determined in detail until they don't enter to tender), so its contract commitment was stopped by region manager's order until some times is passed and this work was stopped until arrival of second half of year and contract commitment was stopped for long time until next performance.

Then the request related to ARS and maintenance saloon was sent by applicant and its package was provided by engineering

services department and then this package was combined with official building previous package after its perfect preparation and signed by region management.

Thus the package was returned to engineering services in order to put them together.

Complication:

1. Doing over twice in providing package :

Providing package consuming time and energy about three times of permitted limit, considering the several requests from applicant and taken decisions in this project, that in including preparation of two separate packages and then putting them together.

- a. during responding to the TSRs several inspections have been done by various experts in this project.(first inspection was done by building expert and other inspection by electric and mechanic expert about ARS in other date and rust protection expert has inspected the maintenance saloon).

2. Irregular work procedure on TSR and contract license.

Considering the above information, any determined discipline is not seen in TSR confirmation and investigation procedure and contract permission and we encountered to the following subjects:

- Present of confirmation and signs without date from respectable directors.
- Lack of observance in priority and delay of confirmations
- To issue contract license, confirmation from pipe lines operation assistant and operator's confirmation were in same date and also operator's confirmation date was before final date of package.

4.3. Recommendations

- The applicants shall do general investigations and more comprehensive view toward their protective area in order to prevent from continuous issuance of TSRs and contract licenses for proper scheduling to preparation of its package from beginning and several coming and going to engineering department and putting together unit, etc. will be prevented. Even they shall have some proper and complete forecasts at near the end of year for New Year.
- Discipline observance in accomplishment of TSR stages and contract license
- When TSR is sent to engineering department, that department must do perfect inspection on the request description in order to plan and synchronize inspect by various experts if it is

necessary. Because this led to do continuous works equivalently and the response would be done sooner.

5. Results

Considering the performed investigations on the project of renovation and reconstruction of QZN yard saloon and official building and ARS building, the effective factors on the delay in contract commitment activities has been shown in diagrams of figures 1.

6. Discussion

6.1. Managerial implication

Region 3 of gas transmission operations as one of the main units in Iran's gas transmission a significant portion of its activities occur in a project structure. According to this subject that, the domain of pipeline, complex and installations have been dominated by organizations that is spread in six provinces significant number of projects will be implemented during the year and tries to optimize guidance of its resources, attain to the realization effective and efficiently management of projects. This organization in line with proper management of resources

(human, financial, material, energy, etc.) and eliminate or reduce additional costs and prevent waste of resources ,aware of this important , optimal and proper projects management are possible to find the projects delay factors and eliminate or improve these factors. Therefore, with regard to the various stages of preparation, issuance and verification TSR are an important part in the beginning of each project, in the present study examined the factors affecting to delay in the TSR and finally, will be provide recommendations for reducing costs related to the delay in this case.

By providing results and statistical analysis of this research to Iran's gas transmission operations in the region 3, and focus of the organization on which factors have more effect on TSR delay, organization can effort to fix and correct these factors finally attain to reduce or eliminate the latency TSR. And thus prevent the loss of a considerable part of organization valuable resources. also provide the results to partner organizations among other companies operating in Iran gas pipeline can be good model for them in the pathological of the factors affecting possible delays in the process of completing the TSR In the its operational areas.

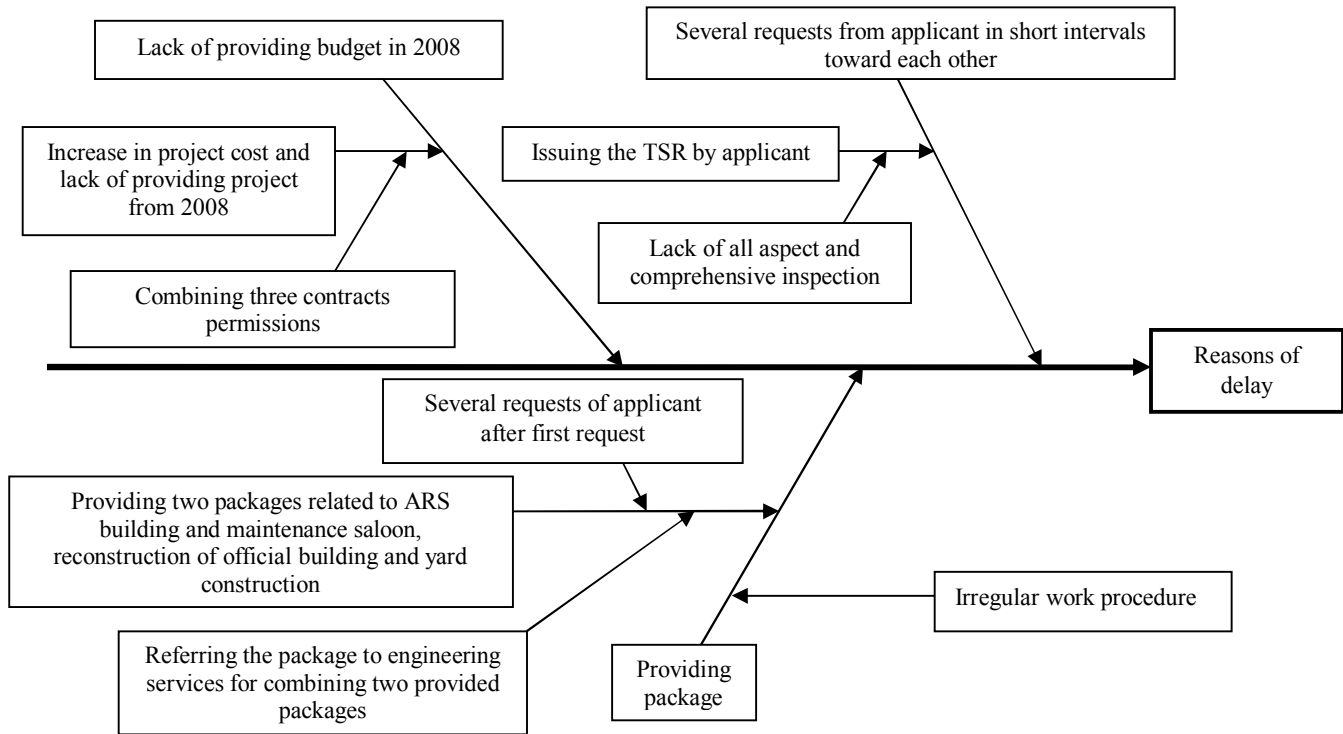


Figure 1. The effective factors on the delay in contract commitment activities in Renovation and reconstruction of saloons and official building in QZN yard and ARS building.

6.2. Limitations and Future research

Geographical dispersion and far distance between trade and staff units of under studying organization

- Present official problems in accessing to TSR process documents
- Present official problems in accessing to documents of article case study

Considering the expanded operational process and projects of the follower units in region 3 of gas transmission the below axes can be named as a suggested future researches and studies:

- Research and study about obstacles for putting into operation the results of papers and researches same as present paper in gas operation regions
- Research and study about optimization of 54 fold stages in providing technical and expert services to contract commitment and reduction of additional phases or combining some of them

7. Findings and Conclusion

An important part at the beginning of implementing a project is completion of TSR process, so, delay in TSR eventually will lead to delay in project and in addition to waste of organizational resources (human resources, finance, materials, energy, etc.) perhaps the implementation of the project change or even be canceled due to passage of time. Therefore it is necessary to take the necessary actions on behalf of the relevant units in order to reduce runtime and completion of TSR stages. To achieve this purpose, it is necessary for unit or applicant units have overall assess and more comprehensive look than the scope of shielding their own at the time of issuing the TSR until be avoided to the issuance of TSR and permits frequently contracts until the beginning of the work, is prepared good timing for the package and prevent of the many socializing to the Engineering Services and integrating Department and so. Even the convenient and full predictions at the end of each year will have for the new year. It is necessary to obtain correct predictions, the Engineering Services Department to take action before beginning the new year than received the next year TSR requests from the applicant units and proper planning for

expert review and allocation of costs. Also, It is necessary in this regard with the relevant units of the financial unit and ...several meetings be done for coordination. Other cases are the observance of discipline, Conducting and completing TSR And the license contract at the time of approval and signed by the responsible (necessary TSR be answered at first and the package should be prepared after send the license contract until be faster the sending process and approval of contracts Licensing). Also, It is necessary the engineering services unit, at the time of sending the TSR have a complete study on the application, If you need this to be done by the various experts, planning, and simultaneously visit. Because it causes successive works done parallel and responding faster. At the end, at the meeting of projects follow up, decision making be done about considering the time period allowed to perform the various stages of project , so that be considered as a baseline for analysis all projects. Finally, some suggestions are presented in order to reduce the delays as the following:

1. The applicants shall do general investigation and more comprehensive view on their protection area while issuing TSR in order to prevent from continuous issuing the TSRs and contract licenses, so at the first there will be proper scheduling for providing its package without continuous reference to engineering services department and combining, etc. Even they should perform proper and complete predictions at last of each year for the New Year.
2. Discipline observance in accomplishment of TSR stages and contract permission by respectable authorities during confirmation and
3. Signing. (First TSR must be replied and the package would be provided after sending contract permission and contract shall be done sooner until sending and permission confirmation processes).
4. While sending TSR to engineering department, that department should investigate the request description fully, then if it is necessary to be viewed by various experts, thus synchronize planning and inspection must be done.
5. Decision making in projects meeting in order to consider the allowed times for various project stages operation as a baseline for analysis all projects situations.

Appendixes

Appendix 1. Stages of providing the technical and expert services to contract commitment:

1. technical services request
2. investigation and confirmation of the related assistant
3. sending the request to the engineering and technical services assistant
4. entering the letter to engineering assistant office
5. recording in exploration notebook of engineering and technical services request and sending it to engineering services
6. referring to chief of engineering services
7. referring to engineering expert
8. technical and economical evaluation of the request by engineering expert
9. environmental evaluation
10. initial confirmation of technical and expert services request
11. final confirmation of technical and expert services request
12. sending the technical and expert services request to the applicant
13. sending the contract permission
14. investigation and confirmation of contract permission
15. sending to secretariat to receive number
16. to register number from secretariat
17. sending the contract permission to engineering and technical services assistant
18. referring to planning and technical services department
19. controlling and registering the contract permission
20. referring to engineering expert
21. engineering expert inspection and providing package
22. inspection and confirmation of goods affairs
23. inspection and confirmation of energy M.A
24. sending the package to operator
25. inspection and confirmation of package by the operator
26. inspection and confirmation of planning and maintenance methods director
27. inspection and confirmation of engineering and technical services assistant
28. referring to the financial and supporting assistant

29. providing the budget and blocking the considered budget
30. inspection and confirmation from financial affairs
31. sending the letters about considered criteria of inquiring the quality evaluation to contracts affairs
32. inspection and confirmation of contracts affairs
33. inspection and confirmation of region manager
34. sending letter in order to celebrate a meeting by tenders commissions for receiving the recall permission
35. receiving the recall permission for the mentioned project
36. sending letter to the technical-trading committee for inspecting and confirming the evaluation criteria
37. sending letter to public relations about announcement publication
38. first term performance and recording the recall
39. second term performance and recording the recall
40. inspection and confirmation about evaluation criteria and determination of tender persons' quality evaluation method
41. readiness announcement of companies
42. sending letter to the tender persons in order to receive tender documents
43. receiving the tender documents, visit sites and delivering the pocket to the contracts affairs
44. sending letter to the technical-trading committee for quality evaluation of the applicant contractors
45. establishment of a committee and announcing the result of quality investigation to the contracts affairs
46. sending letter to the applicant contractors in order to participate in financial pockets opening meeting
47. planning and financial pockets opening meeting and providing the protocol
48. sending letter to tenders commissions about final evaluation of project
49. announcing to selected contracted about the acceptance communication of suggestions
50. sending the guaranty of good performance of duty
51. sending the guaranty to financial affairs
52. Announcement from project director to contractor by the assistant
53. Conclusion of a contract
54. Sending the contract copies to the related departments

Appendix 2.Tables:

Operational specifications and stages of the project have been extracted in appendix tables 1 and 9.

Table 1. Case study		
Renovation and reconstruction of QZN Yard official building saloons and ARS building		
Contractor: Niyaresgostare Pars Co.	Contract No.: 760040	Contract cost: 1680000000
Contract beginning date: 06-06-2010	Contract end date: 10-28-2010	Contract time: 150 days

Table 1. Case study: Renovation and reconstruction of QZN Yard official building saloons and ARS building

Table 2. Technical and expert services request (expansion of official building space)				
No.	Work processes	Related department	Beginning date	End date
1.	Technical and expert services request (expansion of official building space)	QZN pipe line operation center	08-14-2008	08-14-2008
2.	Inspection and confirmation of Technical and expert services request(expansion of official building space)	Assistant of pipe lines operation	Without date	Without date
3.	TSR entering to engineering assistant's office(expansion of official building space)	Assistant of pipe lines operation	Without date	Without date
4.	To register in the TSRs notebook and sending it to engineering services (expansion of official building space)	Assistant's office of engineering and technical services	08-24-2008	08-24-2008
5.	Referring TSR to engineering expert (expansion of official building space)	Assistant of engineering and technical services	08-24-2008	08-24-2008
6.	Technical and economical evaluation of TSR request by engineering expert (expansion of official building space)	Engineering services (senior engineering)	Without date	Without date

7.	Final confirmation of TSR (expansion of official building space)	Assistant of technical and expert services	Without date	Without date
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Table 2. Technical and expert services request (expansion of official building space)

Table 3. Technical and expert services request (Increase in room of present official building- establishment of kerbs around yard area)				
No.	Work processes	Related department	Beginning date	End date
1.	Technical and expert services request(increase in room of present official building, establishment of kerbs around yard area)	QZN pipe line operation center	Without date	Without date
2.	Inspection and confirmation of technical and expert services request (increase in room of official building)	Operation assistant of pipe lines	Without date	Without date
3.	TSR entering to engineering assistant's office(increase in room of present official building-establishment of kerbs around yard area)	Operation assistant of pipe lines	Without date	Without date
4.	To register in TSRs notebook and sending to engineering services (increase in room of official building)	Assistant's office of engineering and technical services	11-16-2008	11-16-2008
5.	Referring TSR to engineering expert(increase in room of present official building-establishment of kerbs around yard area)	Assistant of engineering and technical services	11-16-2008	11-16-2008
6.	Technical and economical evaluation of TSR request by engineering expert(increase in room of present official building-establishment of kerbs around yard area)	Engineering services (senior engineer)	Without date	Without date
7.	Final confirmation of TSR(increase in room of present official building-establishment of kerbs around yard area)		05-18-2009	Without date

Table 3. Technical and expert services request (increase in room of present official building- establishment of kerbs around yard area)

Table 4. Technical and expert services request (Reconstruction and expansion of the present building)				
No.	Work processes	Related department	Beginning date	End date
1.	technical and expert services request (reconstruction and expansion of the present building)	QZN pipe line operation center	04-14-2009	04-14-2009
2.	Inspection and confirmation of technical and expert services request (reconstruction and expansion of the present building)	Operation assistant of pipe lines	Without date	Without date
3.	Referring TSR to engineering services chief request (reconstruction and expansion of the present building)	Assistant of engineering and technical services	Without date	04-18-2009
4.	To register in TSR notebook and sending to engineering services request (reconstruction and expansion of the present building)	Assistant office of engineering and technical services	04-19-2009	04-19-2009
5.	Referring TSR to engineering expert request (reconstruction and expansion of the present building)	Engineering services	04-20-2009	04-23-2009
6.	Initial inspection and review by	Engineering services	04-24-2009	04-30-2009

	construction expert related to TSR request (reconstruction and expansion of the present building)			
7.	Technical and economical initial evaluation of TSR by construction expert (reconstruction and expansion of the present building)	Engineering services	05-01-2009	05-02-2009
8.	To review by electric and mechanic expert related to TSR (reconstruction and expansion of the present building)	Engineering services	Without date	Without date
9.	Conformation of TSR by chief of engineering services (reconstruction and expansion of the present building)	Engineering services	Without date	05-03-2009
10.	Final confirmation of TSR (reconstruction and expansion of the present building)	Assistant of engineering and technical services	Without date	Without date
11.	Technical and economical final evaluation of TSR request by construction expert (reconstruction and expansion of the present building)	Engineering services	Without date	08-24-2009

Table 4. Technical and expert services request (Reconstruction and expansion of the present building)

Table 5. Contract permission (Reconstruction and expansion of present building)				
No.	Work processes	Related department	Beginning date	End date
1.	Sending contract permission by applicant (reconstruction of official building in QZN pipe lines operation)	QZN pipe lines operation center	Without date	Without date
2.	Inspection and confirmation of contract permission (reconstruction of official building in QZN pipe lines operation)	Operation assistant of pipe lines	Without date	Without date
3.	Referring contract permission to the engineering services chief (reconstruction of official building in QZN pipe lines operation)	Assistant of engineering and technical services	03-10-2009	03-10-2009
4.	To register the contract permission (reconstruction of official building in QZN pipe lines operation)	Planning and maintenance methods	03-11-2009	03-14-2009
5.	Referring the permission to engineering expert (reconstruction of official building in QZN pipe lines operation)	Engineering services director	03-14-2009	03-14-2009
6.	Confirmation of engineering expert on the permission (reconstruction of official building in QZN pipe lines operation)	Engineering services	03-14-2009	03-14-2009
7.	Operator's confirmation on the permission (reconstruction of official building in QZN pipe lines operation)	Operation Assistant of pipe lines	03-15-2009	05-17-2009
8.	Engineering and technical services assistant's confirmation on the permission (reconstruction of official building in QZN pipe lines operation)	Assistant of engineering and technical services (reconstruction of official building in QZN pipe lines operation)	05-18-2009	05-18-2009
9.	Energy expert's confirmation on the permission (reconstruction of official building in QZN pipe lines operation)	Analyzing the systems and energy management	05-19-2009	05-19-2009
10.	Inspection and confirmation of goods affairs on the permission	Goods affairs	05-19-2009	05-19-2009

	(reconstruction of official building in QZN pipe lines operation)			
11.	Providing the budget and blocking the considered budget (reconstruction of official building in QZN pipe lines operation)	Financial affairs	05-19-2009	05-19-2009
12.	Inspection and confirmation of financial affairs on the permission (reconstruction of official building in QZN pipe lines operation)	Financial affairs	05-20-2009	05-23-2009
13.	Inspection and confirmation of contracts affairs on the permission (reconstruction of official building in QZN pipe lines operation)	Contracts affairs	05-24-2009	05-26-2009
14.	Inspection and confirmation of region manager on the permission (reconstruction of official building in QZN pipe lines operation)	Region manager	05-27-2009	05-30-2009

Table 5. Contract permission (Reconstruction and expansion of present building)

Table 6.Contract permission (Reconstruction and expansion of present building)				
No.	Work processes	Related department	Beginning date	End date
1.	Sending the contract permission from applicant (reconstruction and expansion of the present building)	Pipe lines operation center	04-14-2009	04-14-2009
2.	Inspection and confirmation of contract (reconstruction and expansion of the present building)	Operation Assistant of pipe lines	04-14-2009	04-14-2009
3.	Operator's confirmation on the permission (reconstruction and expansion of the present building)	Operation Assistant of pipe lines	04-14-2009	04-14-2009
4.	Referring the contract permission to the engineering services director (reconstruction and expansion of the present building)	Assistant of engineering and technical services	05-04-2009	04-15-2009
5.	To register the contract permission (reconstruction and expansion of the present building)	Planning and maintenance methods	05-05-2009	05-05-2009
6.	Referring the permission to the engineering expert (reconstruction and expansion of the present building)	Engineering services director	05-05-2009	05-05-2009
7.	Confirmation of engineering expert on the permission (reconstruction and expansion of the present building)	Engineering services	05-06-2009	11-22-2009
8.	Confirmation by assistant of engineering and technical services on the permission (reconstruction and expansion of the present building)	Assistant of engineering and technical services	11-23-2009	11-29-2009
9.	Inspection and confirmation of goods affairs on the permission (reconstruction and expansion of the present building)	Goods affairs	11-30-2009	12-01-2009
10.	Providing the budget and blocking the considered budget (reconstruction and expansion of the present building)	Financial affairs	12-02-2009	12-07-2009
11.	Inspection and confirmation of the financial affairs on the permission (reconstruction and expansion of the present building)	Financial affairs	Without sign and it has been stopped	Without sign and it has been stopped

12.	Inspection and confirmation of contracts affairs on the permission (reconstruction and expansion of the present building)	Contracts affairs	Without sign and it has been stopped	Without sign and it has been stopped
13.	Inspection and confirmation of region manager on the permission (reconstruction and expansion of the present building)	Region manager	Without sign and it has been stopped	Without sign and it has been stopped

Table 6. Contract permission (Reconstruction and expansion of present building)

Table 7. Technical and expert services request (Renovation and reconstruction of external surfaces of maintenance saloon building)				
No.	Work processes	Related department	Beginning date	End date
1.	Technical and expert services request (renovation and reconstruction of external surfaces of maintenance saloon building)	Pipe lines operation center	04-14-2009	04-14-2009
2.	Inspection and confirmation of technical and expert services request (renovation and reconstruction of external surfaces of maintenance saloon building)	Operation assistant of pipe lines	Without date	Without date
3.	Referring the TSR to director of engineering services (renovation and reconstruction of external surfaces of maintenance saloon building)	Assistant of engineering and technical services	Without date	04-18-2009
4.	To register in TSRs notebook and sending to engineering services (renovation and reconstruction of external surfaces of maintenance saloon building)	Assistant's office of engineering and technical services	04-19-2009	04-19-2009
5.	Referring the TSR to engineering expert (renovation and reconstruction of external surfaces of maintenance saloon building)	Director of engineering services	04-20-2009	04-23-2009
6.	Inspection and reviewing by the TSR construction expert	Engineering Services	04-24-2009	04-30-2009
7.	Technical and economical initial evaluation by the construction expert (renovation and reconstruction of external surfaces of maintenance saloon building)	Engineering Services	05-01-2009	05-02-2009
8.	To review and announcing from TSR protection expert (renovation and reconstruction of external surfaces of maintenance saloon building)	Engineering Services	05-03-2009	05-07-2009
9.	Confirmation of TSR by the director of engineering services (renovation and reconstruction of external surfaces of maintenance saloon building)	Director of engineering services	05-10-2009	05-08-2009
10.	Final confirmation of TSR by the assistant of engineering and technical services (renovation and reconstruction of external surfaces of maintenance saloon building)	Assistant of engineering and technical services	Without date	Without date

Table 7. Technical and expert services request (Renovation and reconstruction of external surfaces of maintenance saloon building)

Table 8. Contract permission				
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(renovation and reconstruction of QZN operation maintenance saloon building)				
No.	Work processes	Related department	Beginning date	End date
1.	Sending the contract permission from the applicant (renovation and reconstruction of QZN operation maintenance saloon building)	Pipe line operation center	04-14-2009	04-14-2009
2.	Inspection and confirmation of contract permission (renovation and reconstruction of QZN operation maintenance saloon building)	Operation Assistant of pipe lines	04-14-2009	04-14-2009
3.	Operator's confirmation on the permission (renovation and reconstruction of QZN operation maintenance saloon building)	Operation Assistant of pipe lines	04-14-2009	04-14-2009
4.	Referring the contract permission to the engineering services director (renovation and reconstruction of QZN operation maintenance saloon building)	Assistant of engineering and technical services	05-04-2009	04-15-2009
5.	Referring the contract permission to the engineering expert (renovation and reconstruction of QZN operation maintenance saloon building)	Director of engineering services	05-05-2009	05-05-2009
6.	Confirmation of engineering expert on the permission(renovation and reconstruction of QZN operation maintenance saloon building)	Engineering services	05-05-2009	05-05-2009
7.	To register the contract permission (renovation and reconstruction of QZN operation maintenance saloon building)	Planning and maintenance methods	05-06-2009	11-22-2009
8.	Confirmation by assistant of engineering and technical services on the permission (renovation and reconstruction of QZN operation maintenance saloon building)	Assistant of engineering and technical services	11-23-2009	11-29-2009
9.	Inspection and confirmation of goods affairs on the permission (renovation and reconstruction of QZN operation maintenance saloon building)	Goods affairs	11-30-2009	12-01-2009
10.	Providing the budget and blocking the considered budget (renovation and reconstruction of QZN operation maintenance saloon building)	Financial affairs	12-02-2009	12-07-2009
11.	Inspection and confirmation of the financial affairs on the permission (renovation and reconstruction of QZN operation maintenance saloon building)	Financial affairs	Without sign and has been stopped	Without sign and has been stopped
12.	Inspection and confirmation of contracts affairs on the permission (renovation and reconstruction of QZN operation maintenance saloon building)	Contracts affairs	Without sign and it has been stopped	Without sign and it has been stopped
13.	Inspection and confirmation of region manager on the permission(renovation and reconstruction of QZN operation maintenance saloon building)	Region manager	Without sign and it has been stopped	Without sign and it has been stopped

Table 8. Contract permission (Renovation and reconstruction of QZN operation maintenance saloon building)

Table 9. Other processes of project performance based on whole TSRs and sent contract permissions				
No.	Work processes	Related department	Beginning date	End date
1.	Providing the package (expansion of official space, yard construction and health services) and sending to operator	Engineering Services	04-14-2009	04-14-2009
2.	Providing the package of ARS construction and sending it to the electric expert, etc to say their ideas	Engineering Services	04-14-2009	04-14-2009
3.	Sending letter to contracts affairs about considered criteria of inquiring quality evaluation	Assistant of engineering and technical services	04-14-2009	04-14-2009
4.	Providing the second package (maintenance saloon – ARS building)	Engineering Services	05-04-2009	04-15-2009
5.	Sending letter in order to celebrate meeting by tenders commission for receiving recall permission	Contracts affairs	05-05-2009	05-05-2009
6.	Receiving recall permission for the mentioned project	Tenders committee	05-05-2009	05-05-2009
7.	Sending announcement publication letter to public relations	Contracts affairs	05-06-2009	11-22-2009
8.	Sending letter to technical-trading committee to inspect and confirmation of evaluation criteria	Contracts affairs	11-23-2009	11-29-2009
9.	Performing and writing the first term recall in Vatane Emrouz newspaper	Public relations	11-30-2009	12-01-2009
10.	Improvement and resending the letter of considered criteria of inquiring evaluation	Operation assistant of pipe lines	12-02-2009	12-07-2009
11.	Performing and writing the second term recall in Etelaat(information) newspaper	Public relations	01-14-2010	01-18-2010
12.	Inspection and confirmation of evaluation criteria and determination of tenderers ' quality evaluation method	Technical-trading committee	01-06-2010	02-22-2010
13.	Readiness announcement from the companies	Tenderers	01-13-2010	01-31-2010
14.	Providing the final package	Engineering Services	01-04-2010	20-09-2010
15.	Sending letter from engineering services to the contracts affairs for finalization of tender documents	Engineering Services	03-02-2010	03-02-2010
16.	Sending letter to engineering services to receive tender confirmation by contracts affairs	Contracts affairs	03-02-2010	03-02-2010
17.	Referring the letter from director of engineering services to expert	Engineering Services	03-03-2010	03-03-2010
18.	Response of mechanical expert	Engineering Services	03-03-2010	03-03-2010
19.	Response of electric expert	Engineering Services	03-03-2010	03-03-2010
20.	Response of color protection expert	Engineering Services	03-06-2010	03-06-2010
21.	Sending letter to the tenderers for receiving tender documents	Contracts affairs	03-06-2010	03-07-2010
22.	Sending letter from QZN yard to engineering services to predict some new subjects in the contract	QZN pipe lines operation center	03-08-2010	03-09-2010
23.	Receiving the tender documents	Tenderers	03-08-2010	03-09-2010
24.	Resending the letter to tenderers in order to receive tender documents for announcing about new subject	Contracts affairs	03-10-2010	03-10-2010
25.	Visit site	Tenderers	03-10-2010	03-10-2010
26.	To deliver the pockets to the contracts	tenderers	03-11-2010	03-16-2010

	affairs			
27.	Sending letter to technical- trading committee for quality evaluation of applicant contractors	Contracts affairs	03-17-2010	04-06-2010
28.	To announce the quality evaluation results to contracts affairs	Technical and trading committee	04-07-2010	05-02-2010
29.	Sending letter to the commission by the contracts affairs in order to open the pockets	Contracts affairs	05-02-2010	05-09-2010
30.	Sending letter to applicant contractors in order to participate in financial pockets opening meeting	Contracts affairs	05-09-2009	05-09-2009
31.	Sending the letter of introduction from the tenderers	Tenderers	05-09-2009	05-09-2009
32.	Financial pockets opening letter and providing the protocol	Tender commission	05-10-2010	05-10-2010
33.	Sending letter to the tenders about project final evaluation	Contracts affairs	05-10-2010	05-10-2010
34.	To announce acceptance of suggestion to selected contractor	Contracts affairs	05-11-2010	05-12-2010
35.	Sending the guaranty of good performance of duties by the contractors	Contractors	05-12-2010	05-22-2010
36.	Sending guaranty to financial affairs	Contracts affairs	05-23-2010	05-26-2010
37.	Project director's announcement to the contractor by the operation assistant of pipe lines	Operation assistant of pipe lines	05-27-2010	05-29-2010
38.	Presenting the protocol of workshop equipping	Contractor	05-30-2010	06-01-2010
39.	Presenting the protocol of land delivery	Contractor	06-01-2010	06-01-2010
40.	Conclusion of the contract	Contractor	06-02-2010	06-06-2010
41.	Sending the contract copies to the related departments	Contracts affairs	06-07-2010	06-15-2010

Table 9. Other processes of project performance based on whole TSRs and sent contract permissions

The consumed time from registration the first TSR to send the documents of contract=661 days
From 08-14-2008 to 06-15-2010

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