

(8) 工場設計・施工2 (建築)

電気機関車修理工場での検査・修理内容や業務量等をもとに建屋等建築物の規模及びレイアウトの検討を行うとともに、概略設計、施工計画の立案を行い、概算工事費を算出する。

(9) 工場設計・施工3 (電気)

電気機関車修理工場での検査・修理内容や業務量等をもとに必要となる電気設備の概略設計、施工計画の立案を行い、概算工事費を算出する。

(10) 検査・修理計画

電気機関車修理工場での検査・修理内容や業務量等をもとに、1年間の実施プログラムを策定する。

(11) 環境/公害防止

環境の現状を把握、環境調査T/Rの作成、環境調査の監督、調査結果の解析を行い、環境影響評価を行うとともに公害防止計画を策定し、必要に応じてその結果を設計、施工計画に反映させる。

## 6.5 本格調査に向けての留意事項

本格調査の内容については、前述したとおりであるが、その実施にあたっては、以下の点に留意する必要がある。

(1) 旧ソ連邦時代には、鉄道は連邦を構成する共和国への原材料や工業製品を輸送するための重要な交通機関として位置づけられていたことから、ウズベキスタン国においても、鉄道のインフラストラクチャーの整備は比較的進んでおり、ウズベキスタン国鉄の技術水準も比較的高いといえる。しかしながら、旧ソ連邦時代には車両の検査・修理業務についても分業体制をとっていたため、電気機関車及び電車のオーバーホールについては国内の工場等では十分に対応できず、さらに旧ソ連邦より車齢の高いものを引き継いだこともあり車両の老朽化が著しい。また一方では、国内の電化計画が進展しており、電気機関車及び電車の不足に対する対応が急務の課題となっている。したがって早急に車両修理計画を策定し、これに基づく修理工場建設計画を実施に移す必要がある。

(2) 電気機関車修理工場の規模や修理計画の策定の基礎となる電気機関車及び電車の導入計画の策定にあたっては、ウズベキスタン国の電化計画の進捗状況、近隣諸国の鉄道整備・輸送動向等を十分に踏まえる必要がある。

- (3) 建設候補地であるウズベキスタン機関区及びタシケント車両工場の双方においては、既に建屋が完成しており、現時点では放置状態となっている。また、検査・修理用設備、労働力もある程度は確保されている。これら現有施設等の能力を十分考慮したうえで、適切な修理工場の建設計画を検討する必要がある。

特にタシケント車両工場にあつては、電化計画の進展によりディーゼル機関車修理業務が減少すること、現在、同工場で行っている客車の修理については、いずれはセルゲリの客車修理工場に転換が図られることなどから、今後の業務量が減少することを懸念しており、設備の遊休化、熟練工の活用についても考慮する必要がある。

- (4) 環境／公害防止担当者は、地下水、水文調査、工場公害防止（特に水質汚濁防止対策）の業務経験者が望ましい。また、ウズベキスタン国側に提出する環境アセスメント書の様式、提出先、提出期限等については、環境担当カウンターパートを通じて確認する必要がある。

- (5) タシケント車両工場の近傍には、軍事関連施設と考えられる建築物があり、今回の技術協力や今後の我が国の支援が、軍事と明確に分離されたものとなるよう配慮する必要がある。また、今回の事前調査においては同工場の詳細な配置図が入手できなかったが、本格調査の実施に当たっては、各建屋の配置を含め詳細な現地調査が必要である。

- (6) ウズベキスタン国政府担当者、調査対象地区現場担当者等との英語による意志疎通は、困難が予想されるため、本格調査においては、ロシア語から日本語（または英語）への通訳の雇用を検討すべきである。

	1	2	3	4	5	6	7	8
現地調査								
国内作業								
レポート	▲	▲	▲	▲	▲	▲	▲	▲
	IC/R	P/R		DF/R				F/R

IC/R:Inception Report P/R:Progress Report DF/R:Draft Final Report F/R:Final Report

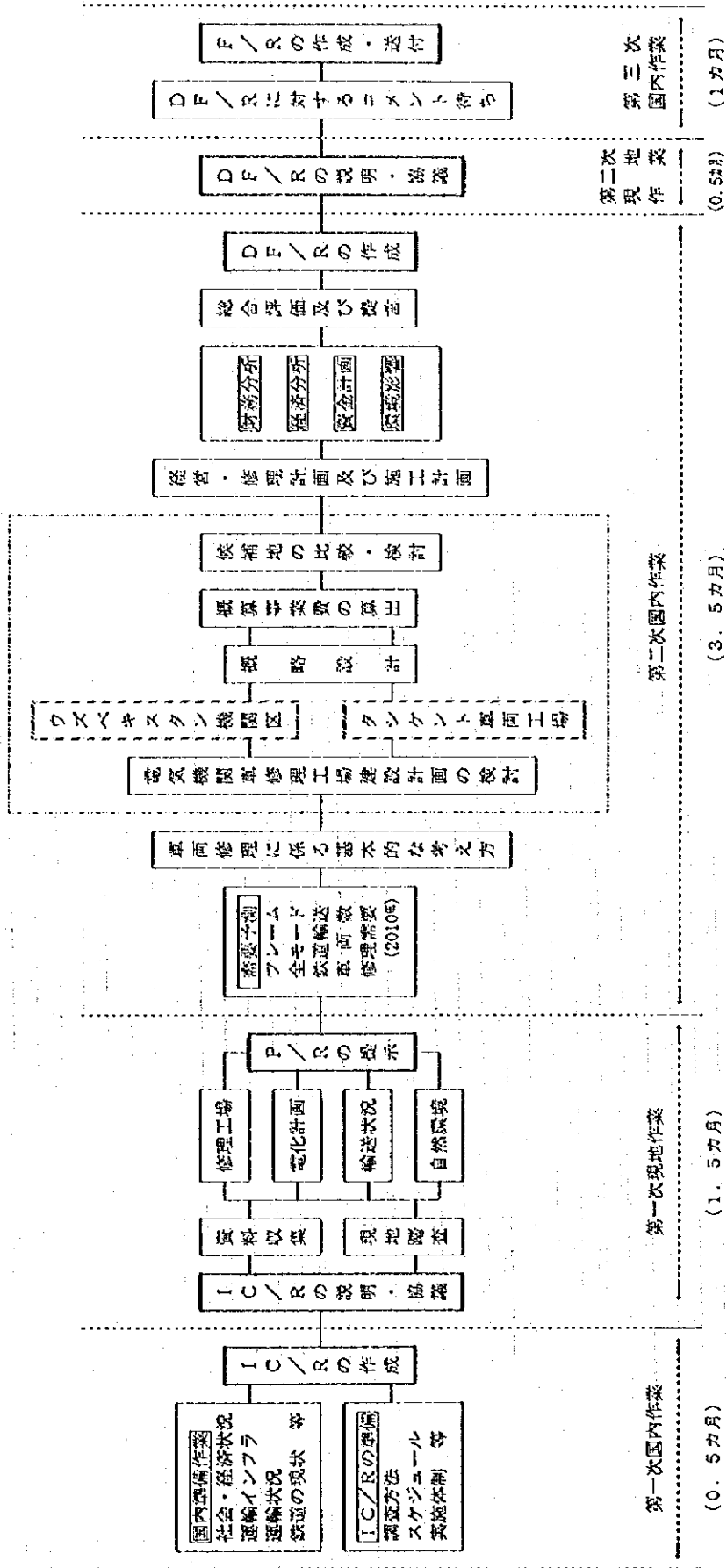
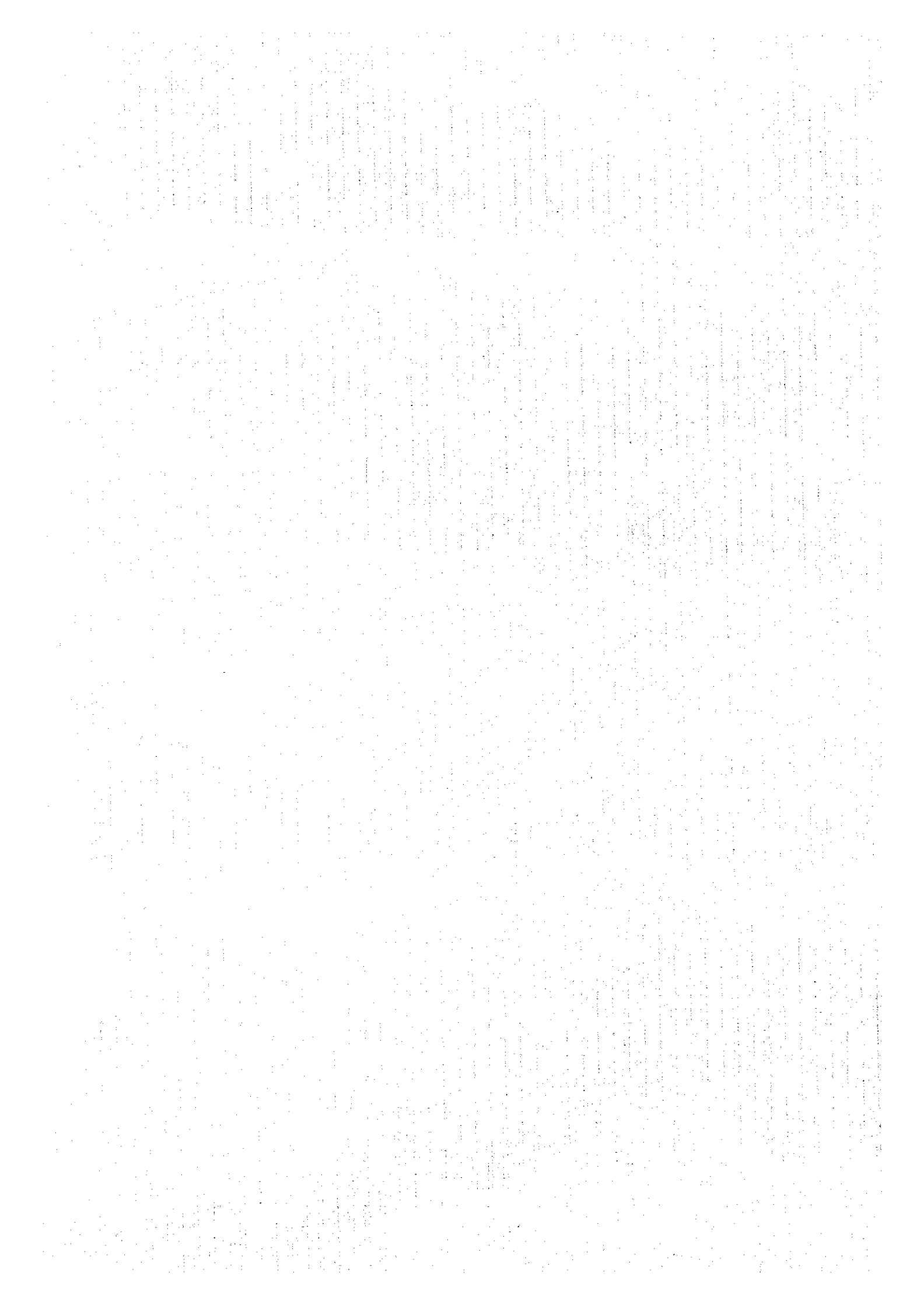


図6-1 本格調査の実施手順



## 付 属 資 料



1. Terms of Reference

ЎЗБЕКИСТОН РЕСПУБЛИКАСИ  
ТАШҚИ ИҚТИСОДИЙ  
АЛОҚАЛАР ВАЗИРЛИГИ



МИНИСТЕРСТВО ВНЕШНИХ  
ЭКОНОМИЧЕСКИХ СВЯЗЕЙ  
РЕСПУБЛИКИ УЗБЕКИСТАН

700077, Тошкент ш., Буюк. ипак йули куч., 75 700077, г. Ташкент, ул. Буюк ипак йули, 75  
телефон (3712) 689256 телекс 116294 TORG SU телетайп 336155 TORG телефакс (3712) 687231  
116122 ATLAS SU 336157 ЧЕК (3712) 687477

№ ЭГ-01/16-3531" 11.12.1995



Посольство Японии в  
Республике Узбекистан

Кас.: направления заявки по программе ODA.

Министерство внешних экономических связей свидетельствует свое уважение Посольству Японии в Республике Узбекистан и имеет честь передать заявку представленную Государственно-акционерной железнодорожной компанией "Узбекистон темир йуллари" на проведение технико-экономического обоснования по проекту строительства завода по ремонту электровозов по линии технической помощи в рамках программы ODA на 1995 финансовый год.

Министерство внешних экономических связей, пользуясь случаем возобновляет свое глубокое уважение Посольству Японии в Республике Узбекистан.

Приложение: копия заявки на английском языке — 5 стр.

Первый заместитель министра

Э.Ганиев

## **PROPOSAL FOR RENDERING TECHNICAL ASSISTANCE**

- 1.Name of the project** Feasibility Study for the repair workshops project for electrolocomotives in depot Uzbekistan
- 2.Location** Uzbekistan station,Tashkent Region
- 3.Name of the general designing organisation** Institute "Tashgiprotrance"
- 4.Name of the general construction organisation** Trust "Sredaztransstroj"
- 5.Targets** To study technical and economical possibilities for the repair works for electrolocomotives on basis of Uzbekistan depot
- 6.Description of the project** Trasference of railway into the electric traction will need establishment of repair workshops base for electrolocomotives on the way with the capacity of 21 units per year.Existing situation with electrolocomotives repairs could not satisfy the growing park of electrolocomotives.Besides the main industrial workshops for carriages repairs it is necessary to construct a subsidiary building for repair of electrolocomotives. Before placing electrolocomotives for repair works it is necessary to wash and clean them and after repairment to paint them.At present such subsidiary buildings are absent. According to depot rules and regulations such measures are extremely necessary.
- 7.The volume of necessary help** Volume: for the feasibility study would be determined for the period of 6 months.It would be necessary also :  
a) assistance of 20 specialists  
b)partnership :10  
c)equipment  
Total cost :
- 8.The type of necessary help:** Technical assistance on the basis of loans from the foreign government



RECOMMENDATION REFERENCE TO FEASIBILITY STUDY FOR THE  
PROJECT OF CONSTRUCTION OF REPAIR WORKSHOPS FOR ELECTROLOCOMOTIVES IN DEPOT UZBEKISTAN

(SEPTEMBER 1993)

1. General basis and necessity for the project.

Total extension for the railway line to be transferred into electric traction on the first stage of the project is 1212,9 km (to Buchara station). Today this line is served by diesel trains. Because of the newly introduced electrification of lines on Central Asian Railways it would be organised electric lines within Chengeldy, Kokand, Superfosfatnaya and repair workshops for electrolocomotive park on stations Uzbekistan, Buchara, Kungrad. For the passenger transportation electrolocomotive repair workshops would be located radially on Tashkent - Aris, Tashkent - Kokand, Tashkent - Samarkand lines, and for the cargo transportation they would be located roundly, covering all the territory of electrification. It is planning to organised on all railway territory main repair workshops depots, mainly located on Uzbekistan, Kokand, Buchara, Marakanda, Kungrad stations.

Maintenance for TO-2 and equipment for electrolocomotives from depot Uzbekistan is planned to be on Shumilov, Havast, Kokand, Buchara, Kungrad, Sultanizdag stations.

Current repair works for TR-2 and TR-3 locomotives would be achieved because of the next specialization of depot:

- depot Uzbekistan: maintenance of TO-4, current repairs of TR-1 and non-planned repairs of registered park for passengers and cargo electrolocomotives BL 60 pk and BL 80 c, and also TR-2, TR-3, KR-1 of electrolocomotives of series BL 80 c, registered in depot Kokand, Kungrad, and Buchara.

Depot performs all kinds of current repairs of electrolocomotives and for that it has next facilities:

- 3 lines workshops TR for electrolocomotives with dimensions 120 X 24m, subsidiary building for repair workshops and sections with dimensions 216 X 12 m, workshop for TR-3 electrolocomotives, where repair works are organised on conveyor line, where for more efficiency current repairs of TR-2 will be also performed.

Workshops for TR-3 electrolocomotives are with 3 sections - 30, 24, 18 m, and the length of workshops is 102 m.

Existing situation for repair workshops and further development of electric lines could not satisfy the growing park for electrolocomotives. Absence of repair stations on the way forced administration of Central Asian Railway to establish repair workshops base for electrolocomotives in depot Uzbekistan.

## 2. Feasibility Study Targets

The purpose of Feasibility Study for the project is the organisation of the base for repair workshops in Uzbekistan depot and to formulate plan for the development of repair basis to consider technical and economical possibilities for implementation of this plan and to give recommendations for its fulfilment.

## 3. Volume of feasibility study.

To reach the above mentioned targets , project for construction of repair workshops should include next points :

- 1.)to collect and check existing information on
  - social and economic conditions
  - existing and future plans for the use of workshops territories
  - existing railway net and transport conditions
- 2.)to exam best versions of the ways of making repairs in workshops
- 3.)to make survey and examination on :
  - topography
  - geology
  - hydrogeology
- 4.)to exam alternative depots
- 5.)to estimate the number of repair places
- 6.)to formulate plan for repair works
- 7.)to consider and formulate standards of design
- 8.)to prepare preliminary design for engineering works
- 9.)to estimate the cost of the project
- 10.)to perform economical analysis
- 11.)to study environmental impact of the project
- 12.)to prepare schedule and recommendations

## EXECUTION OF THE REPORT

### (1) Organisation

The execution agency for the project is association "Sredaztransstroj", Central Asian Railway.

## (2) Expert examination and men-months

According to estimations about 20 men--months of foreign experts would be necessary to prepare report, including :

- Team Leader
- Transport planning engineer
- Transport engineer
- Regional planning engineer
- Chief engineer for railway traffic
- Construction engineer
- Geologist
- Soil scientist(materials engineer)
- Cost evaluation specialist
- Environmental specialist
- Transport economist

## (3) Report Agenda

Report would be created according to the attached time--table

### *Reports*

Next reports would be presented to the Government of Uzbekistan:

1. Inceptional Report would be presented after the beginning of Feasibility Study, with the description of methodology , schedule , organisation and so on.
2. Final project report would be presented within 6 months after the beginning of Feasibility Study with recommendations.
3. Final Report would be presented within 2 months after getting reply and amendments from the Government of Republic of Uzbekistan and Central Asian Railway.

### 6. LIABILITIES OF THE GOVERNMENT OF UZBEKISTAN

- (1) To provide smooth execution of Feasibility Study the Government of Uzbekistan will undertake the necessary measures:
  - a) to secure safety for the group of specialists
  - b) to allow to enter ,to exit and temporary stay in Uzbekistan to all members of the Study Team,during their work for the project, and to exempt them from any registration and consular fees.

c)to exempt members of the team from any taxes, entrance fees, payments for the brought machinery and equipment into the Republic of Uzbekistan, which would be taken back after the completion of the Study.

d)to exempt members of the team from any taxes on income , and other payments, related with salaries and any other bonuses,payed to the members of the team for their work,related with the implementation of Feasibility Study.

e)to provide necessary facilities for the Study Team for money remittances and also to use funds, that they will bring into Uzbekistan with the connection of execution of Feasibility Study

(2)Central Asian Railway will work as counterpart agency to the Team, and also as a coordinatory and liaison organisation to any government and non – government organisation.

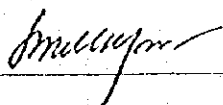
(3)The Government of Uzbekistan and Central Asian Railway will provide next facilities to the Team:

- any relevant information related to Feasibility Study
- local staff from Uzbek Side for assistance
- proper office with proper office equipment in Tashkent City

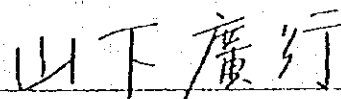
2. Scope of Work

SCOPE OF WORK  
FOR  
THE FEASIBILITY STUDY  
ON  
THE CONSTRUCTION OF ELECTRIC LOCOMOTIVE REPAIR WORKSHOP  
IN  
UZBEKISTAN  
AGREED UPON BETWEEN  
UZBEKISTAN RAILWAYS  
AND  
JAPAN INTERNATIONAL COOPERATION AGENCY

Tashkent , July 18 , 1996



Mr. Mikhail Z. MARTYANOV  
Vice Chairman  
Uzbekistan Railways



Mr. Hiroyuki YAMASHITA  
Leader  
Preparatory Study Team  
Japan International  
Cooperation Agency

## I. INTRODUCTION

In response to the request of the Government of Uzbekistan, the Government of Japan decided to conduct the Feasibility Study on the Construction of Electric Locomotive Repair Workshop in Uzbekistan (hereinafter referred to as "the Study") in accordance with the relevant laws and regulations in force in Japan.

Accordingly, the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programs of the Government of Japan, will undertake the Study, in close cooperation with the authorities concerned of the Government of Uzbekistan.

The present document sets forth the Scope of Work with regard to the Study.

## II. OBJECTIVES OF THE STUDY

The objectives of the study for the project are to organise the base for repair workshop, to conduct a feasibility study on the construction of electric locomotive repair workshop in Uzbekistan.

## III. STUDY AREA

The study area to be covered is Uzbekistan depot and Tashkent Repair Workshop, Tashkent Region

## IV. SCOPE OF THE STUDY

In order to achieve the objectives mentioned above, the Study shall cover the following items;

### 1. Evaluation of the present conditions

- (1) Collection, and analysis of relevant reports, data, and information
- (2) Survey of social and economic conditions
- (3) Examination of present condition on Uzbekistan Railways (hereinafter referred to as "UTJ")
  - 1) railway facilities
  - 2) railway network and train operation conditions
  - 3) repair workshops
  - 4) repair and inspection system for electric locomotive and electric railcar
- (4) Review of the electrification plan

2. Demand forecast ( Target year 2010 )
  - (1) Projection of socio-economic framework
  - (2) Forecast of transportation demand (all mode)
  - (3) Estimation of the railway traffic volume by passenger and freight
3. Initial Environmental Examination ( IEE )
4. Basic concept of the future plans for repair shops
5. Undertaking of a feasibility study
  - (1) Survey on natural conditions
  - (2) Survey on present environmental conditions
  - (3) Estimation of the number of electric locomotives and electric railcars in the future
  - (4) Formulation of repair and inspection systems for electric locomotives and electric railcars
  - (5) Preliminary engineering design
    - 1) optimum location of the repair workshop
    - 2) scale and layout of the repair workshop
    - 3) number and kind of the facilities and equipment
    - 4) principle technical specification of the facilities and equipment
  - (6) Preliminary cost estimation
  - (7) Evaluation of the site of the repair workshop
  - (8) Formulation of an operation and maintenance program
  - (9) Formulation of an implementation program
- (10) Project evaluation
  - 1) economic evaluation
  - 2) financial evaluation
  - 3) environmental impact assessment. ( EIA )
6. Overall evaluation and recommendation

## V. STUDY SCHEDULE

The Study shall be conducted in accordance with the attached tentative schedule.

MF

*Accepted*

## VI. REPORTS

JICA shall prepare and submit the following reports in English to the Government of Uzbekistan.

### 1. Inception Report

Twenty (20) copies  
At the commencement of the Study

### 2. Progress Report

Twenty (20) copies  
Within two (2) months after the commencement of the Study

### 3. Draft Final Report

Twenty (20) copies  
Within six (6) months after the commencement of the Study  
The written comments on the Draft Final Report from the Government of Uzbekistan shall be delivered to JICA within one (1) month after submission of the report.

### 4. Final Report

Forty (40) copies  
Within two (2) months after the receipt of the written comments on the Draft Final Report from the Government of Uzbekistan.

## VII. UNDERTAKING OF THE GOVERNMENT OF UZBEKISTAN

1. To facilitate smooth conduct of the Study, the Government of Uzbekistan shall take necessary measures ;
  - (1) To secure the safety of the Japanese study team (hereinafter referred to as " the Team ")
  - (2) To permit the members of the Team to enter, leave and sojourn in Uzbekistan for the duration of their assignment therein, and exempt them from foreign registration requirements and consular fees,
  - (3) To exempt the members of the Team from taxes, duties and other charges on equipment, machinery and other materials brought into and out of Uzbekistan for the conduct of the Study,
  - (4) To exempt the members of the Team from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Team for their services in connection with the implementation of the Study,
  - (5) To provide necessary facilities to the Team for remittance as well as utilization of the funds introduced into Uzbekistan from Japan in connection with the implementation of the Study,

UT

*Receipt*



- (6) To secure permission for entry into private properties or restricted areas for the implementation of the Study.
  - (7) To secure permission for the Team to take all data and documents including maps and photographs related to the Study out of Uzbekistan to Japan.
  - (8) To provide medical services as needed. Its expenses will be chargeable on members of the Team.
2. The Government of Uzbekistan shall bear claims, if any arises, against the members of the Team resulting from, occurring in the course of, or otherwise connected with, the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part of the members of the Team.
  3. UTJ shall act as counterpart agency to the Team and also as coordinating body in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.
  4. UTJ shall, at its own expense, provide the Team with the following, in cooperation with other organizations concerned :
    - (1) Available data and information related to the Study,
    - (2) Counterpart personnel,
    - (3) Suitable office space with necessary office equipment in Tashkent and the study area, if necessary,
    - (4) Credentials of identification cards,
    - (5) Appropriate number of vehicles with drivers.

#### VIII. UNDERTAKING OF JICA

For the implementation of the Study, JICA shall take the following measures :

1. To dispatch, at its own expense, the Team to Uzbekistan,
2. To pursue technology transfer to the Uzbekistan counterpart personnel in the course of the Study.

#### IX. OTHERS

JICA and UTJ shall consult with each other in respect of any matter that may arise from or in connection with the Study.

UTJ



TENTATIVE SCHEDULE OF THE STUDY

	1	2	3	4	5	6	7	8	9	10
Work in Uzbekistan	[Bar]					[Bar]				
Work in Japan	[Bar]		[Bar]				[Bar]			
Reports	▲ IC/R	▲ P/R				▲ DF/R		▲ F/R		

IC/R : Inception Report

P/R : Progress Report

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F/R : Final Report

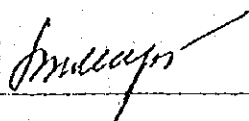
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3. Minutes of Meeting

MINUTES OF MEETING  
SCOPE OF WORK  
FOR  
THE FEASIBILITY STUDY  
ON  
THE CONSTRUCTION OF ELECTRIC LOCOMOTIVE REPAIR WORKSHOP  
IN  
UZBEKISTAN  
AGREED UPON BETWEEN  
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JAPAN INTERNATIONAL COOPERATION AGENCY

Tashkent , July 18 , 1996



Mr. Mikhail Z. MARTYANOV  
Vice Chairman  
Uzbekistan Railways



Mr. Hiroyuki YAMASHITA  
Leader  
Preparatory Study Team  
Japan International  
Cooperation Agency

The Japanese Preparatory Study Team ( hereinafter referred to as "the Team"), organized by Japan International Cooperation Agency ( hereinafter referred to as "JICA") and headed by Mr. Hiroyuki YAMASHITA visited Uzbekistan from July 9 to 20, 1996 for the purpose of discussing the Scope of Work for " the Feasibility Study on the Construction of Electric Locomotive Repair Workshop in Uzbekistan" (hereinafter referred to as "the Study").

The Team had a series of discussions with authorities concerned of the Government of Uzbekistan.

The final meeting was held on July 18, 1996, with attendance list attached as Annex.

Main items discussed by both sides are as follows;

#### 1. Study Area

- (1) Uzbek side requested to add Tashkent Repair Workshop as study area, both sides discussed it.
- (2) Both sides agreed that study areas to be covered are Uzbekistan Depot and Tashkent Repair Workshop to evaluate the plan of optimum and systematic repairs for electric locomotives.

#### 2. Electric railcar

Both sides agreed that the study covers the plan of repair for electric railcars, considering electric railcars are repaired in electric locomotive repair workshop.

#### 3. Schedule of the Study

Uzbek side requested that, considering the schedule for applying funding agencies, the Study period be as short as possible.

#### 4. Data for the Study

- (1) Japanese side requested to arrange data for the Study as soon as possible.
- (2) Uzbek side promised to provide necessary data for the Study, and to arrange the answers to the item of questioner which Japanese side didn't receive answer within three months.

#### 5. Others

- (1) Both sides agreed that The Uzbekistan side would establish a Steering Committee.
- (2) Uzbek side requested counterparts training in Japan . Japanese side promised to convey this request to JICA Headquarters in Tokyo.

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*M. S. S. S.*

## ATTENDANCE LIST

## 1. UZBEKISTAN SIDE

## (1) Uzbekistan Railways

Mr. Mikhail Z. MARTYANOV	Vice Chairman
Mr. Valery L. DAVIDOVICH	Chief of Service of Department of International Communication
Mr. Vladimir A. GUBACHEV	Deputy Chief of service of Department of international communication
Mr. Ravil T. KHISMATULIN	Director of Locomotive Division

## (2) Uzzheldorremash Industrial Association Leading Enterprise

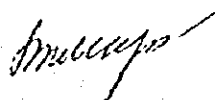
Mr. Mikhail A. GLUSCHENKO	Chief Engineer
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## 2. JAPANESE SIDE

## Japanese Preparatory Study Team

Mr. Hiroyuki YAMASHITA	Leader
Mr. Takashi SUZUKI	Member
Mr. Katsumi KISHITANI	Member
Mr. Shoichi TSUGANE	Member
Mr. Yuji HATAKEYAMA	Member
Mr. Jun KATORI	Member

UT



4. Questionnaire

付属資料一 4

QUESTIONNAIRE

OF

JICA PREPARATORY STUDY TEAM

FOR

A STUDY ON THE REPAIR WORKSHOPS PROJECT

FOR

ELECTROLOCOMOTIVES IN DEPOT UZBEKISTAN

July, 1996

JAPAN INTERNATIONAL COOPERATION AGENCY

The questionnaire is prepared by the Japanese Preparatory Study Team for A STUDY ON THE REPAIR WORKSHOPS PROJECT FOR ELECTROLOCOMOTIVES IN DEPOT UZBEKISTAN (hereinafter referred to as the Study) so as to obtain basic information and data needed for the Study.

Please answer all the questions in English and attach materials requested in this questionnaire. Answers need not be too much in detail but should be brief and precise.

Thank you for your cooperation.

Note: •Please write Y for the Data/Item in the "Availability" which is available.  
•Please write N for the Data/Item in the "Availability" which is not available.

•If attached materials are not written in English, please write down notes in English on materials for understanding by the mission.

I. SOCIO-ECONOMIC CONDITIONS (1)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		AVAILABILITY	PLACE OF DATA AVAILABLE	
1. Land use (1) Land use map (2) Regulations on land use (3) Guideline (4) Land use plan	1) Industry, agriculture, mining, etc.	Y X X X	Uzbekistan Railway	1:1.500.000 1:500.000
2. Population (1) Indices of population	1) Changes of population by areas, age groups, sexes, industries, etc.	Y	"	[Report of First Study for Special Assistance for Project Formation for The Construction of a Coach Repair Workshop The Republic of Uzbekistan]
3. Economy (1) Socio-economic indices	1) Annual data for the past 10 years 2) Future prospect (2020)	Y	"	"
(2) GNP	1) Annual data for the past 10 years	-	"	"
(3) GDP	2) GDP by areas, industries, etc. for the past 10 years	Y	"	"
(4) Input-output table	1) Annual data for the past 10 years	Y	"	"
(5) Average family's income and expenditure		X		
(6) Amount of export and import	1) By items, countries and routes for the past 10 years	-		
(7) Changes of public investment		-		
(8) Price index	1) Inflation rate (past 10 years)	Y	"	"
(9) Development plan of economy	1) Medium and long term plan (in a whole country by industries)	X		
4. Administration (1) Administrative district map		-		
5. Regional development plan	1) Project plan 2) Future development plan	N		



I. SOCIO-ECONOMIC CONDITIONS (2)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		AVAILABILITY	PLACE OF DATA AVAILABLE	
6. Organization of the Government	1) All government 2) Authorities responsible for transport and information	-		
7. Government budget allocation	1) Whole government (past 10 years) 2) By ministries and agencies (past 10 years) 3) The Uzbekistan Railway (past 10 years)	N		
8. Others	1) 1:5000 scaled map with contour of areas to investigate re-routing	Y	Uzbekistan Railway	1:1.500.000 1:500.000
(1) Topographical map		Y	"	1:1.500.000 1:500.000
(2) Road network map		-		
(3) Bus route map		-		
(4) Air route map		-		
(5) Inland waterway map		-		
(6) Volume of passengers and freight by traffic mode	1) By passengers, goods and routes for the past 10 years	Y		[Report of First Study for Special Assistance for Project Formation for The Construction of a Coach Repair Workshop The Republic of Uzbekistan]
(7) Flow of passengers and freight by traffic mode	1) OD chart between blocks by passengers and goods	N		
(8) Construction and reinforcement plan and project by traffic mode		N		

# I. CONDITIONS OF RAILWAY SYSTEMS (I)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		AVAILABILITY	PLACE OF DATA AVAILABLE	
<p>1. General</p> <p>(1) Railway network map</p> <p>(2) Operational route length (km) of passenger and freight by routes</p> <p>(3) Character of routes</p> <p>(4) Population and industry along routes</p> <p>(5) Subsidiary measures by the Government</p>		Y	Uzbekistan Railway	
<p>2. Organization and staff</p> <p>(1) Organization of the Uzbekistan Railway</p> <p>(2) Staff of the Uzbekistan Railway</p>	<p>1) Organization of business, command system, locations of offices, etc.</p> <p>1) Disposition of staff, number of staff by occupation, composition of staffs by length of service and ages, training system</p>	Y	"	
<p>3. Business</p> <p>(1) Tariff structure</p> <p>(2) Traffic volume (daily average, monthly and annually by routes, domestic and international)</p> <p>(3) Flow chart of passengers and freight</p> <p>(4) Business record (revenue and expenditure)</p>	<p>1) By passengers and freight</p> <p>1) Number of passengers and tonnage of freight</p> <p>2) Passenger-km and tonnage-km</p> <p>3) Volume of freight by goods</p> <p>4) Running km of cars</p> <p>1) OD chart between stations</p> <p>1) Amount (past 10 years)</p> <p>2) Statement of profit and loss balance sheet</p>	Y	"	
		N	"	
		Y	"	

II. CONDITIONS OF RAILWAY SYSTEMS (2)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		AVAILABILITY	PLACE OF DATA AVAILABLE	
4. Facilities (1) Design standards	1) Design standards (track-clearance, rolling-stock gauge, designed maximum train operation speed, track gauge, width of formation level, track-center distance, minimum radius of curvature, maximum grade, minimum longitudinal radius of curvature, passing tonnage, road-bed structure, cross section of cutting and embankment, etc.) 2) Section working kilometre. 3) Discrimination between single and double track. Table (list) of gradient	Y	Uzbekistan Railway	
(2) Railway map (plan and profile)		Y	"	
(3) Track structure	1) Weight/type/ length of rails, rail fastening method, age of railway, materials and size of sleepers. 2) Maximum center-to-center distance, rail fastening device, materials and thickness of ballast. 3) Point switch method and the number of points	Y	"	
(4) Turnout		-		
(5) Table (list) of stations	1) Name, kilometre-post of center, the number of gauge lines in a station, effective length, width, maximum train length, discrimination between passenger handling and goods handling	Y	"	
(6) Plane figure of station		-		

I. CONDITIONS OF RAILWAY SYSTEMS (3)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		AVAILABILITY	PLACE OF DATA AVAILABLE	
5. Electric facilities (1) Block system (2) Signal (3) Communication system	1) Traffic phase method 1) Type. communication circuit diagram	- - Y	- - Uzbekistan Railway	
6. Rolling stock (1) The number of rolling stocks	1) The number of coaches by type, by motive power, by age, by maker	Y	"	[Implementation for Construction of Electric Locomotives Repair workshop Depot Uzbekistan and Tashkent Diesel Locomotives Plant]
7. Train operation (1) Train frequency (2) Working timetable (3) Commercial speed (4) Speed restriction sections	1) Designed and actual train frequency by passenger/freight and by section 1) Timetable 1) Designed and actual operation speed by section 1) Section 2) Speed 3) Reason	Y Y Y -	" " " "	Tashkent Station (North, South)
8. Operation and maintenance for facilities (1) Construction facilities  (2) Electric facilities (3) Improvement work	1) Workshops improvement plan. the current situation of railway maintenance and the future plan. 2) Condition of facilities weathering (evaluation criteria for maintenance and renewal, maintenance standard) 1) Actual maintenance work for electric facilities and improvement plan 1) Actual improvement work and plan	-  Y -	-  " "	[Implementation for Construction of Electric Locomotives Repair workshop Depot Uzbekistan and Tashkent Diesel Locomotives Plant]

I. CONDITIONS OF RAILWAY SYSTEMS (4)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		AVAILABILITY	PLACE OF DATA AVAILABLE	
9. Budget: (1) Construction cost (2) Improvement cost (3) Maintenance cost	1) Annual budget during past ten years 1) Annual budget during past ten years 1) Annual budget during past ten years	Y Y Y	Uzbekistan Railway " "	
10. Cost (1) Construction cost	1) The latest data	Y	"	
11. Environmental assessment (1) Existing reports				

## II. ELECTRIFICATION AND ELECTROLOCOMOTIVES (I)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		AVAILABILITY	PLACE OF DATA AVAILABLE	
1. Plan of railway development etc. (1) Details of the plan, progress, enter- priser and revision (2) Government's authority with this plan, enforcement and plan of funds (3) Master plan on other railway develop- ment (4) Amount of investment, for railway facilities and items of source of revenue (actual results for the past five years or so and future prospects)		Y	Uzbekistan Railway	Implementation for Construction of Electric Locomotives Repair workshop Depot Uzbekistan and Tashkent Diesel Locomotives Plant.]
2. Plan of electrification (1) Service diagram of present electric lines (2) Present conditions of electrification as far as Samarkand and Buchara (3) Plan of purchase of locomotives following extension of electric lines	1) Schedule time of completion of electrification 2) Progress of negotiations with Siemens	Y	"	Tashkent Station (North, South)
3. Present situation of electrolocomotives (1) Electrolocomotives  (2) Future plan	1) Number of possession 2) Number of working (spare rate) 3) Number of electrolocomotives by types makers and ages 4) Extent of superannuation 1) Number of electrolocomotives needed in the future 2) Plan of new manufacturing (or purchas- -ing)	Y	"	Implementation for Construction of Electric Locomotives Repair workshop Depot Uzbekistan and Tashkent Diesel Locomotives Plant.]

### III. ELECTRIFICATION AND ELECTROLOCOMOTIVES (2)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		AVAILABILITY	PLACE OF DATA AVAILABLE	
(3) Inspection	1) Desigend life 2) Legal system for a periodic inspection	Y	Uzbekistan Railway	Implementation for Construction of Electric Locomotives Repair workshop Depot Uzbekistan and Tashkent Diesel Locomotives Plant]
(4) Failures	1) Number of failures for the past five years 2) Details of main failures	-		
(5) Existence of obstacles of services due to superannuation of locomotives (ex. decrease of services)		-		
4. Situation of repair works of electro-locomotives				
(1) Repair works in the country	1) Name of possible works 2) Frequency (annually) 3) Number by degrees	Y	"	
(2) Subcontracters	1) Name of works 2) Name of subcontracters by works 3) Frequency (annually) 4) Number by degrees	Y	"	
(3) Domestic depots	1) Locations 2) Scales 3) working situation	Y	"	
(4) Newly built Jinigiata Depot	1) Scale 2) Floor space 3) Instruments for inspection 4) Future plan of utilization	-		
(5) New repair workshop	1) Site 2) Whole plan (idea) 3) Instruments for inspection to be considered 4) Organization 5) Disposition of workers	N		

### III. ELECTRIFICATION AND ELECTROLOCOMOTIVES (3)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		AVAILABILITY	PLACE OF DATA AVAILABLE	
(6) Plan of employment of necessary workers (7) Ability of repair works for own locomotives (8) Educational system for workers (9) Parts for replacement	1) Volume in stock 2) Reliability of suppliers	N		
5. Trend (1) Railway development (2) Transportation in neighboring countries (3) Silk Road Railways		Y N N	Uzbekistan Railway	



IV. ENVIRONMENTAL ISSUES (1)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		AVAILABILITY	PLACE OF DATA AVAILABLE	
<p>1. Legislation related to environmental policies and standards</p> <p>(1)Responsible ministry or agency</p> <p>(2)Laws/guidelines</p> <p>(3)Environmental quality standards including emission/effluent standards</p> <p>- Standard values and penalties</p> <p>- Monitoring system and its responsible agency</p> <p>(4)Laws/guidelines related to environmental impact assessment (EIA)</p>	<p>1)air pollution</p> <p>2)water pollution</p> <p>3)soil pollution</p> <p>4)noise</p> <p>5)vibration</p> <p>6)offensive odor</p> <p>1)Type/size of activities for EIA</p> <p>2)Procedure</p>	<p>Y</p> <p>Y</p> <p>Y</p> <p>Y</p> <p>Y</p> <p>Y</p> <p>Y</p> <p>Y</p>	<p>Environmental Protection Committee in Tashkent</p>	<p>Environmental Protection Law</p>
<p>2. International convention on environmental conservation</p>	<p>1)Name of international convention you have affiliated to</p> <p>2)Year of affiliation</p>			
<p>3. Present situation of the proposed project sites</p> <p>(1) Socio-economic environment</p>	<p>1) Plan of resettlement, if any (number of people to be resettled) (compensation)</p> <p>2)Main industry or source of income of residents</p> <p>3)Distribution of schools, hospitals, etc. (public facilities)</p> <p>4)Cultural property or archaeological sites</p> <p>5)Use of water area (existence of common water-area)</p> <p>6)Solid waste collection/disposal system and waste water treatment system</p>	<p>N</p> <p>?</p> <p>?</p> <p>N</p> <p>Y</p> <p>Y</p>		

IV. ENVIRONMENTAL ISSUES (2)

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		AVAILABILITY	PLACE OF DATA AVAILABLE	
(2) Natural environment	<p>1) Location of particular areas officially protected such as national parks and natural parks</p> <p>2) Species of precious animals and plants in the area</p> <p>3) Distribution of important historical spots, landscape and scenery</p> <p>1) Present conditions of air quality, water quality, soil contamination, noise and vibration</p> <p>2) Regulations of emission gas, on effluent, for prevention of soil contamination, and for prevention of noise and vibration</p>	N		
(3) Quality of life	<p>1) governmental organization/university</p> <p>2) private sector</p> <p>1) governmental organization/university</p> <p>2) Private sector</p>	Y N Y N		
4. Present organization executing environment study and environmental impact assessment (EIA)	<p>(1) Organization executing environment study</p> <p>(2) Organization executing EIA</p> <p>(3) Experience of execution of environmental study and EIA</p>			
5. Environmental impact assessment (EIA) of the proposed project	<p>(1) Environmental factors/items to be expected affecting environments by the proposed project</p> <p>(2) Necessity of EIA in the proposed project</p> <p>(Please refer to the attached forms of Screening and Scoping)</p>			



V. CONSULTANTS AND SURVEYORS

ITEM	DESCRIPTION	AVAILABILITY		NAME OF MATERIALS
		AVAILABILITY	PLACE OF DATA AVAILABLE	
<p>1. Consultants and surveyors                      (1) List of registered consulting firm in and actual results and terms of ;                      (2) Cost of investigation and survey</p>	<p>1) Environmental survey                      2) Topographic survey                      3) Soil exploration, geological survey                      4) Traffic survey                      5) Socio-economic survey                      1) Environmental survey (water quality, noise, etc.)                      2) Topographic survey                      3) Boring, sounding survey, laboratory soil test, river-bed material survey, geophysical survey                      4) Origin-destination survey                      5) Socio-economic survey                      1) Environmental specialist                      2) Surveyor                      3) Geotechnical engineer                      4) Traffic engineer                      5) Economist, etc.                      1) Environmental specialist                      2) Surveyor                      3) Geotechnical engineer                      4) Traffic engineer                      5) Economist, etc.</p>	Y	Uzbekistan State Institute of Technical Engineering Researchments	
<p>(3) Salary for consultants</p>				
<p>(4) Bidding rate for consultants</p>				

5. 収集資料リスト

付属資料-5

番号	カテゴリ	資料の名称	発行年	地域	言語	形態	版型	ページ数	オリジナル 複製の別	部数	収集先名称又は 発行機関	寄贈・購入 の別	備考
1	統計資料	Republic of Uzbekistan, E. Akhmedov, Z. Saidaminova	1995	全国	英語 露語 ウズ語	書籍	A 5	263	オリジナル	1	書店	購入	ウズベキスタン国案内等
2	国家政策	Uzbekistan, The Road of Independence and Progress I. A. Karimov	1992	-	英語	書籍	B 6	69	オリジナル	1	書店	購入	
3	経済政策	Uzbekistan along the Road of Deepening Economic Reform. Islom Karimov	1995	-	英語	書籍	A 5	228	オリジナル	1	書店	購入	
4	一般	Socio-Economic Conditions	1995	全国	露語	列挙留め	A 4	9	複製	1	ウズベキスタン国鉄	寄贈	OECD SAPROF 1995
5	法令	Republic of Uzbekistan, Decrees and Resolutions	1994	-	英語	書籍	A 5	151	オリジナル	1	書店	購入	経済改革強化、私有財産の保護、 及び企業家に関する法令
6	一般	Land map of country	-	全国	露語	地図	120cm x80cm	1	オリジナル	1	ウズベキスタン国鉄	寄贈	主要都市名、自然状況、道路ネットワーク(Q/V : 1. (1)他)
7	行政組織	運輸関連機構	1996	-	露語	書面	A 4	1	オリジナル	1	ウズベキスタン国鉄	寄贈	
8	鉄道一般	Railway network map	1996	全国	露語	地図	80cm x50cm	1	オリジナル	1	ウズベキスタン国鉄	寄贈	駅名及びキロ程
9	輸送実態	Designed and actual train frequency by passenger/ freight, Commercial speed by section	1996	全国	露語	書面	A 4	1	複製	1	ウズベキスタン国鉄	寄贈	主要駅間別差定速度、便数

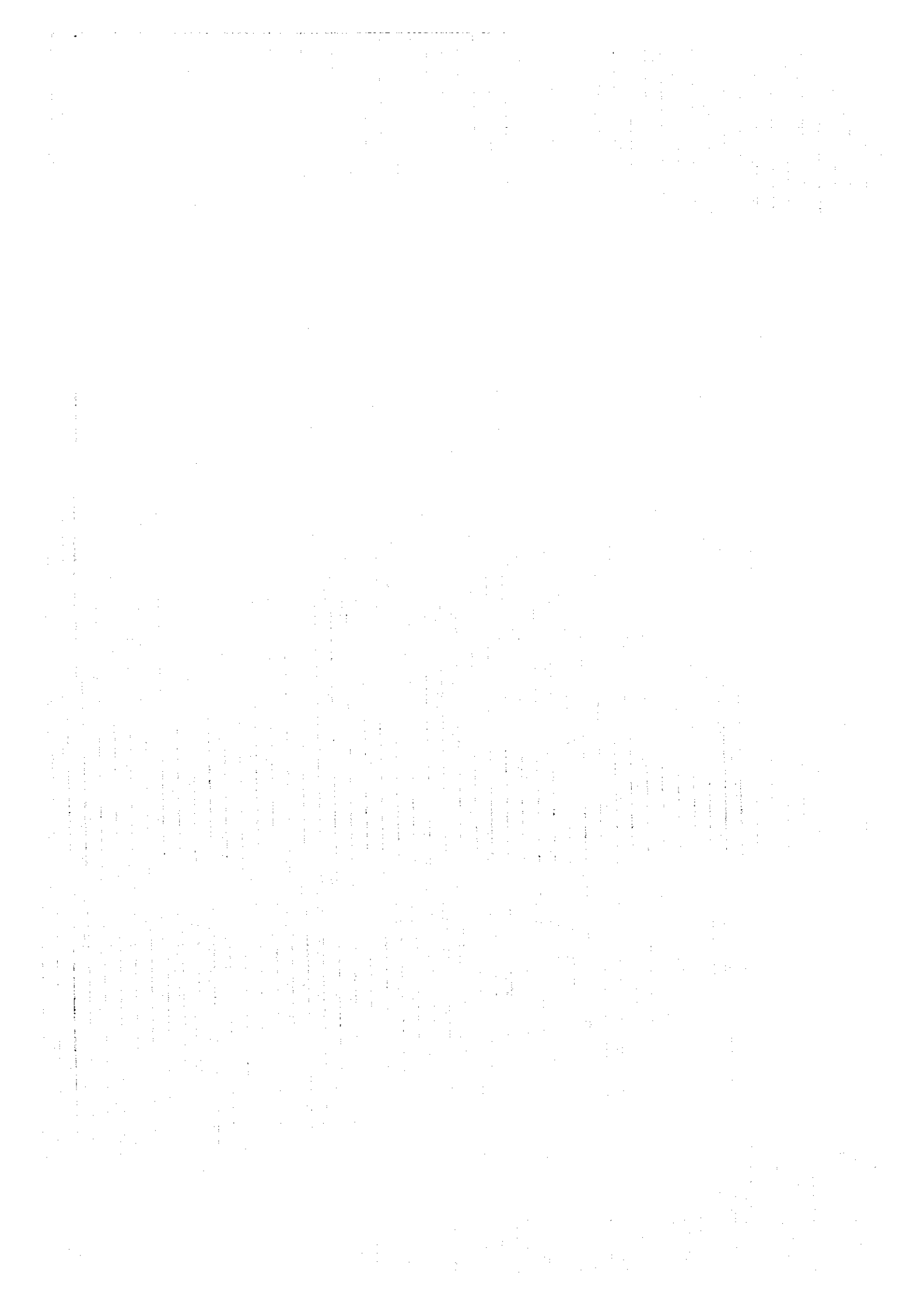
番号	カテゴリ	資料の名称	発行年	地域	言語	形態	版型	ページ数	オリジナル コピーの別	部数	収集先名称又 は発行機関	寄贈・購入 の別	備 考
10	旅客・貨物輸送	Service diagram (Tashkent Station)	1996	タジク	露語	書面	A2	1	オリジナル	1	ウズベキスタン国鉄	寄贈	タジク北、南駅の運行ダイヤ
11	通信/ATM	Communication System	1996	-	露語	書面	A4	1	オリジナル	1	ウズベキスタン国鉄	寄贈	列車無線他
12	技術基準 線路構造	Design Standards, Track Structure, Turnout	1996	-	露語	おぼろげ	A4	2	オリジナル	1	ウズベキスタン国鉄	寄贈	技術基準
13	旅客・貨物輸送 事業主体	Traffic Volume (Passenger -km, Tonnage-km) Organization and Staff of UTJ	1996	全国	露語	おぼろげ	A4	6 (両面)	オリジナル	1	ウズベキスタン国鉄	寄贈	人口、インフラ
14	鉄道施設	Station Turnout	1996	全国	露語	書面	A4	1	オリジナル	1	ウズベキスタン国鉄	寄贈	停車場(?)
15	事業主体	Business Record of UTJ (1)	1995	-	露語	書面	A4	1	コピー	1	ウズベキスタン国鉄	寄贈	収支(UTJ) (1995決算、1996予算)
16	事業主体	Business Record of UTJ (2)	1996	-	露語	おぼろげ	A3	3	コピー	1	ウズベキスタン国鉄	寄贈	収支バラン 支出内訳
17	事業主体	1996年上半期支出内訳 (UTJ)	1996	-	露語	書面	A4	1	オリジナル	1	ウズベキスタン国鉄	寄贈	
18	投資計画	Investment for Railway Facilities (future prospect)	1996	全国	露語	書面	A4	1	オリジナル	1	ウズベキスタン国鉄	寄贈	2000年までの投資規模

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19	車両修理	修理類型別所要日数	1996	-	露語	クリップ留め "	A4 A5	1 1	オリジナル オリジナル	1	ウズベキスタンの国鉄 "	寄贈 "	
20	車両修理	修理類型別工種他参考資料	-	-	露語 " " "	クリップ留め " 書籍 "	A4 A3 B5 A5	4 12 406 270	コピー コピー オリジナル オリジナル	1 1 1 1	ウズベキスタンの国鉄 " " "	寄贈 " " "	直流電気機関車の修理規則 交流電気機関車の修理規則
21	修理工場 建設計画	Implementation Program for Construction of Electric Locomotives Repair Workshop Depot Uzbekistan and Tashkent Diesel Locomotive Plant	1996	タシケント	英語	報告書	A4	64	コピー	1	ウズベキスタンの国鉄	寄贈	ウズベキスタンの機関区、タシケント車輦工場 調査レポート 修理工場計画 将来必要車両数予測等
22	事業主体	ウズベキスタンの機関区の組織・ 職員構成	1996	-	露語	クリップ留め	A4	3 (両面)	オリジナル	1	ウズベキスタンの国鉄	寄贈	氏名入り組織図
23	車両修理 、車両	①ウズベキスタンの機関区の電気 locomotives by types, age ②Designed life ③ウズベキスタンの修理実績 、面積	1996	-	露語	書面	A4	3	オリジナル	1	ウズベキスタンの国鉄	寄贈	ウズベキスタンの機関区の修理実績、 車両修理コスト、面積
24	車両修理	タシケント車輦工場平面図	-	タシケント	露語	平面図	100cm x30cm	1	オリジナル	1	ウズベキスタンの国鉄	寄贈	タシケント車輦工場
25	事業主体	生産連合「ウズベキスタンの機関区」 の従業員構成	1996	タシケント	露語	書面	A4	1	オリジナル	1	ウズベキスタンの国鉄	寄贈	タシケント車輦工場、デザイナーの機関車修理会社

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26	環境地図	Ecological Map of Uzbekistan (1/100万)	1992	全国	露語	図面	A0	1	オリジナル	1	ウズベキスタン国鉄	寄贈	
27	環境法規	大気汚染関連法規	1996	-	露語	書籍	B6	14	コピー	1	ウズベキスタン国鉄	借用後 コピー	総ページ数287から抜粋
28	環境法規	非気ガス規制値	1996	-	露語	書面	A4	2	オリジナル	1	ウズベキスタン国鉄	寄贈	
29	用排水	ウズベキスタン機関区の水、 排水資料	1996	タシケント	露語	書面	A4	2	オリジナル	1	ウズベキスタン国鉄	寄贈	
30	上水	ウズベキスタン機関区の水質水量	1996	タシケント	露語	書面	A5	1	オリジナル	1	ウズベキスタン国鉄	寄贈	
31	用排水	タシケント車庫工場における 水消費量 (1995年)	1996	タシケント	露語	書面	A4	2	オリジナル	1	ウズベキスタン国鉄	寄贈	
32	用排水	Almazar 家具工場の水と 排水に関する報告書	1995	タシケント	露語	報告書	A4	23	オリジナル	1	ウズベキスタン国鉄	寄贈	水質分析結果含む
33	用排水	Pehtaabad市機械工場 Andirhan支部特定水利用 許可証	1996	タシケント	露語	報告書	A4	4	コピー	1	ウズベキスタン国鉄	借用後 コピー	









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