

DUPLICATE
 REPORT U-444
 4890711(3)
 PD-ADD-490-A1

PROJECT APPRAISAL REPORT (PAR)

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1. PROJECT NO. 489-22-290-711	2. PAR FOR PERIOD: Sept. 1975 TO Sept. 1977	3. COUNTRY Korea	4. PAR SERIAL NO. 1978-5 7p
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Korea Standards Research Institute

6. PROJECT DURATION: Began FY 76 Ends FY 79	7. DATE LATEST PIP 5/22/75 CAP	8. DATE LATEST PIP N.A.	9. DATE PRIOR PAR N.A.
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10. U.S. FUNDING	a. Cumulative Obligation Thru Prior FY: \$5,000,000	b. Current FY Estimated Budget: \$ 0	c. Estimated Budget to completion After Current FY: \$ 0
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11. KEY ACTION AGENCIES (Contractor, Participating Agency or Voluntary Agency)

a. NAME Korea Standards Research Institute (K-SRI)	b. CONTRACT, PASA OR VOL. AG. NO.
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The U.S. National Bureau of Standards (NBS)	Memorandum of Understanding (MOU) dated 1/15/76
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1. NEW ACTIONS PROPOSED AND REQUESTED AS A RESULT OF THIS EVALUATION

A. ACTION (X)	B. LIST OF ACTIONS	C. PROPOSED ACTION COMPLETION DATE
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A. ACTION (X)	B. LIST OF ACTIONS	C. PROPOSED ACTION COMPLETION DATE
X X	Extension of Memorandum of Understanding through July 31, 1979. K-SRI has sent request for extension to NBS.	1/14/78

D. REPLANNING REQUIRES REVISED OR NEW: <input type="checkbox"/> PROP <input type="checkbox"/> PIP <input type="checkbox"/> PRO AG <input type="checkbox"/> PIC/T <input type="checkbox"/> PIC/C <input type="checkbox"/> PIC/P	E. DATE OF MISSION REVIEW
PROJECT MANAGER: TYPED NAME, SIGNED INITIALS AND DATE Edwin A. Gales	MISSION DIRECTOR: TYPED NAME, SIGNED INITIALS AND DATE Demis P. Barrett

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II. PERFORMANCE OF KEY INPUTS AND ACTION AGENTS

A. INPUT OR ACTION AGENT CONTRACTOR, PARTICIPATING AGENCY OR VOLUNTARY AGENCY	B. PERFORMANCE AGAINST PLAN							C. IMPORTANCE FOR ACHIEVING PROJECT PURPOSE (X)					
	DISSATISFACTORY		SATISFACTORY			OUT-STANDING		LOW		MEDIUM		HIGH	
	1	2	3	4	5	6	7	1	2	3	4	5	
1. Korea Standards Research Institute					X								X
2. The U.S. National Bureau of Standards					X								X
3.													

Comment on key factors determining rating

Loan Agreement was signed on 9/15/75. All Conditions Precedent were satisfied in April 1976. K-SRI was formally established in December 1975. Since then, K-SRI has demonstrated a relatively high level of competence in implementing program activities, such as construction of K-SRI buildings and laboratories at Dae Duck R&D complex, acquisition of NBS expertise, staffing, arrangement of training programs for K-SRI staff at NBS, recruitment of Korean scientists overseas, procurement of research equipment, and financial management. Under the excellent leadership of (Cont'd)

4. PARTICIPANT TRAINING			X											X
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Comment on key factors determining rating

Training programs and courses are being developed in consultation with NBS based on the GE-TEMPO report. After initial experience obtained from the first group of trainees, NBS and K-SRI came to agreement that a six month in-depth and intensive research-oriented training program (Cont'd)

5. COMMODITIES					X									X
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Comment on key factors determining rating

A major component of the project is the purchase of commodities, principally sophisticated metrology research equipment. Approximately \$3.6 million is budgeted for this purpose. The required equipment lists were developed by GE-TEMPO survey team financed under an AID feasibility study loan. (Cont'd)

6. COOPERATING COUNTRY	a. PERSONNEL						X							X
	b. OTHER													

Comment on key factors determining rating

The ROKG is striving to build up Korea's industrial base and export trade. It perceives K-SRI as a central focal point to provide standardization necessary for industrial development and export promotion. Therefore, it has provided strong support. The Government's allocation of a supplementary budget of 553 million won for construction enabled K-SRI to realize substantial savings by purchasing equipment before price hikes. During the Eighth Korea-United States Commerce Ministers meeting held in September 1977, the ROKG asked for an extension of the MOU and technical cooperation between NBS and K-SRI. The Korean Government has also approached the ADB in terms of financing the second phase of the project after the AID loan funds (Cont'd)

7. OTHER DONORS	NA													
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(See Next Page for Comments on Other Donors)

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II. 7. Continued: Comment on key factors determining rating of Other Donors

No other donors at this time. ADB will provide additional loan funding after the AID loan has been disbursed.

III. KEY OUTPUT INDICATORS AND TARGETS

A. QUANTITATIVE INDICATORS FOR MAJOR OUTPUTS		TARGETS (Percentage/Rate/Amount)					END OF PROJECT
		CUMU- LATIVE PRIOR FY	CURRENT FY 78		FY 79	FY 80	
			TO DATE	TO END			
Construction of K-SRI Buildings at Dae Duck R&D Complex (local funded)	PLANNED	89.3%		10.7%			100%
	ACTUAL PERFORM- ANCE	81.2%					
	REPLANNED			18.8%			100%
Procurement of research equipment, SRMs and specialized library and materials (in terms of contracts awarded)	PLANNED	67%		33%			100%
	ACTUAL PERFORM- ANCE	26%					
	REPLANNED			59%	15%		100%
Recruitment of Korean Scientists overseas (person)	PLANNED	30		5			35
	ACTUAL PERFORM- ANCE	14					
	REPLANNED			15	6		35
Staff Training (Person)	PLANNED	69		21			90
	ACTUAL PERFORM- ANCE	20					
	REPLANNED			35	30		85
B. QUALITATIVE INDICATORS FOR MAJOR OUTPUTS		COMMENT					
1.							
2.		COMMENT:					
3.		COMMENT:					

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IV. PROJECT PURPOSE

1. Statement of purpose as currently envisaged.

2. Same as in PROP? YES NO

Establish a Korean system to insure reliability of industrial measurements - a national metrology standards system.

B. 1. Conditions which will exist when above purpose is achieved.

2. Evidence to date of progress toward these conditions.

1. Enhanced Korean reputation for accurate/precise measurement.
2. K-SRI is capable of maintaining national metrology standards without consultant assistance and without foreign donor financing.
3. Traceability of Korean national metrology standards to international standards in all basic measurement areas.
4. High proportion of industrial firms with accurate measurement systems, traceable to national standards.
5. Decreased number of Korean standards calibrated by (Cont'd)

K-SRI is not yet in full operational conditions to provide calibration/measurement services to indigeneous industries. Therefore, most of EOPS listed in IV B. 1 on the rightside are non-existent or too premature to be assessed. However there are some indications that K-SRI is moving steadily towards planned targets. For 1 year and 9 month period since its establishment in 12/75, K-SRI personnel strength has grown to 106. Research and technical staff recruited both overseas and locally amounts to 62, representing 26 with doctorates, 23 with master degrees, and 10 bachelor degree, thus placing itself in a position for future servicing to Korean industrial firms. Additionally, K-SRI has, with NBS assistance. (Cont'd)

V. PROGRAMMING GOAL

A. Statement of Programming Goal

Support expansion of Korean industry, with particular emphasis on heavy and chemical industry.

B. Will the achievement of the project purpose make a significant contribution to the programming goal, given the magnitude of the national problem? Cite evidence.

Yes. The Sector goal as stated and assumed in the Capital Assistance Paper for the K-SRI project has been reaffirmed by ROKG's Fourth Five Year Plan (1977-1981). The plan calls for the continued support of expansion of Korean Industry with particular emphasis on heavy and chemical industry, to substitute for labor-intensive industry. During the plan period, it is expected that share of heavy and chemical industry in total manufacturing output and in manufacturing exports will increase significantly. Under this given magnitude of ROKG's development strategies, K-SRI will be required and will continue to contribute to achievement of the sector goal by insuring market acceptability of manufactured goods by meeting the quality-conscious world market through providing reliable measurements, and by helping industrial firms to lower units costs and increase efficiency by reducing the number of defective and substandard outputs through improved measurement capabilities.

Page 2 PAR - Section II Comment (Cont'd)

the K-SRI president and thanks to the enthusiasm of other staff members assigned to project implementation who are technically qualified and conversant with project purposes and skilled in planning and management, the project has moved very smoothly. Particularly noteworthy are: (1) the recruitment of staff members: i.e. its current staff strength has grown to 106; and (2) exceptionally good performance in terms of local-currency funded construction work. At the Dae Duck complex, K-SRI has completed 81.3 percent of construction and the AID Regional Engineering Office has praised the quality of the construction.

Original plans called for dedication of K-SRI in May 1978. However, the ROKG would like to inaugurate a number of facilities at the Dae Duck R&D complex simultaneously in September 1978. An international regional conference of standards research institutes will be financed by NBS at the time of the September inauguration.

At the request of ROKG/K-SRI, the TDD has been extended from 9/78 to 9/79. K-SRI indicated in its request that additional time is essential for successful completion of the project. K-SRI's request for the TDD extension was to compensate for some time loss in the following areas: (1) six month delay in startup of the project; i.e., formal establishment of K-SRI could not be effected until 12/75, six month after the signing of the Loan Agreement; (2) some time lapse in commodity procurement resulting from delay in specification review process of the highly specialized and sophisticated equipment involved. Although a majority (68.5%) has been ordered, the balance (31.5%) is yet to be ordered, in some cases fabricated by NBS, delivered, installed and tested; (3) revised training program from 3 months to 6 months to afford more intensive and in depth training; (4) additional time required for the overseas recruitment process, because scientists so contacted indicated they need six months to one year to clear up current commitments in the U.S. before they join K-SRI; and (5) need for continued NBS assistance after the official inauguration in September 1978.

Pursuant to the terms of MOU signed in January 1976, NBS has provided K-SRI with the highest quality of its expertises in terms of (1) design and construction of the K-SRI laboratories, (2) procurement of equipment and instruments including specifications review, (3) technical consultation regarding K-SRI staff recruitment and training in the U.S., (4) conducting training for K-SRI at NBS, (5) other

technical and administrative support such as visiting consultants, and (6) providing K-SRI with research materials, physical standards or instruments for precise measurement or quality control, etc. On frequent occasions, K-SRI has acknowledged the excellent and invaluable quality of NBS services rendered to it. K-SRI is now negotiating with NBS for extension of the MOU through July 1979, in order to continue NBS's scientific, technical and administrative assistance in critical areas during the crucial one year period after the September 1979 inauguration.

Page 2 PAR - Section II.4 Participant Training (Cont'd)

would be much more beneficial to trainees and less expensive than a 3 month orientation program. Of the total 85 trainees planned, (representing 35 scientists to be recruited overseas and 50 scientists and researchers to be hired locally), 20 trainees have either completed or are under training at NBS, thus representing approximately a 23% completion rate. These 20 trainees includes 6 overseas recruitments (1 principal researcher, and 5 senior researchers) and 14 local recruitments (2 principal researchers, 3 senior researchers and 9 junior researchers). K-SRI states that all returned participants are now actively engaged in the field of their respective speciality. Quality of the NBS training is excellent.

Page 2 PAR - Section II.5 Commodities (Cont'd)

The budgeted amount has been committed in full. Review of equipment specifications by NBS has completed for 463 items out of the planned 655 items, thus representing a 70.7% completion rate. Review of the remaining items is expected to be completed by the end of CY 77. Procurement contracts concluded by OSROK for major research equipment amounts to \$943,000 (26%). An additional \$1,600,000 worth of commodities (44%) are being publicly advertised by OSROK for bid solicitation. Delivery of commodities contracted through this date will start in early 1978, and will be housed in the new K-SRI laboratory buildings which are scheduled to be completed by the end of this year.

Page 2 PAR - Section II.6 Cooperating Country (Cont'd)

are fully disbursed. ADB personnel have visited USAID/K to discuss future funding of K-SRI.

Page 4 PAR - Section IV Project Purpose (Cont'd)B.1

- foreign institutions.
6. Increase in number of Korean documentary standards approved for measurement methodologies and devices.
 7. Decrease in number of defective and sub-standard products that are passed by Korean inspection Laboratories.

B.2

conducted a nation-wide census to determine industrial measurements needs. As a result of this survey, it was found that a critical mass of companies has become aware of the needs for calibration. This awareness means it will not be an uphill battle for K-SRI to establish their services.