INTERNAL AUDIT DIVISION

AUDIT REPORT 2013/096

Audit of engineering activities in the United Nations Mission in Liberia

Overall results relating to the effective management of engineering activities in the United Nations Mission in Liberia were initially assessed as partially satisfactory. Implementation of six important recommendations remains in progress

FINAL OVERALL RATING: PARTIALLY SATISFACTORY

18 November 2013

Assignment No. AP2013/626/02

CONTENTS

AUDIT REPORT

Audit of engineering activities in the United Nations Mission in Liberia

I. BACKGROUND

1. The Office of Internal Oversight Services (OIOS) conducted an audit of engineering activities in the United Nations Mission in Liberia (UNMIL).

2. In accordance with its mandate, OIOS provides assurance and advice on the adequacy and effectiveness of the United Nations internal control system, the primary objectives of which are to ensure: (a) efficient and effective operations; (b) accurate financial and operational reporting; (c) safeguarding of assets; and (d) compliance with mandates, regulations and rules.

3. The Engineering Section provided support to UNMIL, including its military and police contingents, in the following areas: construction, renovation, maintenance of facilities, water and sanitation and electrical and mechanical works. UNMIL expenditure for engineering activities for fiscal years 2012/13 and 2011/12 were $12.6 million and $16.2 million respectively. The Engineering Section was headed by a civilian Chief Engineer at the P-5 level and was assisted by a Force Engineer and had 266 authorized posts that included 27 international posts, 33 United Nations volunteers and 206 national posts.

4. Comments provided by UNMIL are incorporated in italics.

II. OBJECTIVE AND SCOPE

5. The audit was conducted to assess the adequacy and effectiveness of UNMIL governance, risk management and control processes in providing reasonable assurance regarding **the effective management of engineering activities in UNMIL**.

6. The audit was included in the OIOS 2013 risk-based work plan due to the operational risks relating to the lack of timely completion of engineering projects.

7. The key controls tested for the audit were: (a) project management; and (b) regulatory framework. For the purpose of this audit, OIOS defined these key controls as follows:

(a) **Project management -** controls that provide reasonable assurance that there is sufficient project management capacity, including financial and human resources, and appropriate project management tools to achieve mandates.

(b) **Regulatory framework -** controls that provide reasonable assurance that policies and procedures: (i) exist to guide engineering activities; (ii) are implemented consistently; and (iii) ensure the reliability and integrity of financial and operational information.

8. The key controls were assessed for the control objectives shown in Table 1.

9. OIOS conducted this audit from March to July 2013. The audit covered the period from 1 July 2011 to 31 March 2013.

10. OIOS conducted an activity-level risk assessment to identify and assess specific risk exposures, and to confirm the relevance of the selected key controls in mitigating associated risks. Through interviews, analytical reviews and tests of controls, OIOS assessed the existence and adequacy of internal controls and conducted necessary tests to determine their effectiveness

11. The audit did not cover waste management activities as this was covered by a 2012 audit of waste management in UNMIL.

III. AUDIT RESULTS

12. The UNMIL governance, risk management and control processes examined were initially assessed as **partially satisfactory** in providing reasonable assurance regarding the **effective management of engineering activities in UNMIL**. OIOS made seven recommendations to address issues identified. UNMIL had work plans and operating procedures to guide engineering operations. UNMIL had also: completed important projects, including maintenance of major and secondary supply roads in the Mission area; constructed and maintained water and sanitation facilities; and installed wastewater treatment plants. However, improvements were needed to improve: (i) engineering project cost estimation and tracking; (ii) supervision and control of engineering job requests and issuance of materials; (iii) procedures for monitoring individual contractors; (iv) monitoring and control of engineering projects and closure of engineering job requests; and (v) follow-up on the delivery of materials ordered.

13. The initial overall rating was based on the assessment of key controls presented in Table 1 below. The final overall rating is **partially satisfactory** as implementation of six important recommendations remains in progress.

Table 1: Assessment of key controls

Business objective	Key controls	Control objectives			
		Efficient and effective operations	**Accurate financial and operational reporting**	**Safeguarding of assets**	**Compliance with mandates, regulations and rules**
Effective management of engineering activities in UNMIL	(a) Project management	Partially satisfactory	Partially satisfactory	Partially satisfactory	Partially satisfactory
	(b) Regulatory framework	Partially satisfactory	Partially satisfactory	Partially satisfactory	Partially satisfactory
FINAL OVERALL RATING: PARTIALLY SATISFACTORY					

A. Project management

Work plans were developed and were being implemented

14. In accordance with United Nations best practices, the UNMIL Engineering Section had developed work plans to plan, prioritize, guide and execute construction and maintenance works. The Mission constructed and rehabilitated contingent accommodations, hospitals, wastewater treatment plants, field ablutions and boreholes, and also undertook the regular maintenance of roads, troop accommodation and office facilities. In monitoring the implementation of the work plan, the Director of Mission Support was updated every two weeks on engineering activities and projects to ensure alignment of activities with

the priorities of the Mission. Overall, adequate and effective work planning and monitoring thereof was in place.

Project cost and tracking system needed to be improved

15. The engineering standard operating procedures (SOPs) required tracking of materials and labor allocated to engineering projects to ensure accurate cost calculations. However, the Excel spreadsheet used by the Engineering Section was not effective in accurately tracking project costs, as material and labor data extracted from the inventory management system (Galileo) and individual contractor attendance sheets were not accurately allocated to the different projects. For example, sand, blocks, aggregates, and laterite were issued in bulk to the Construction and Infrastructure Unit and sector engineering offices, and not issued to individual projects. Also, material issue vouchers and attendance sheets of individual contractors were not always referenced to individual projects. As a result, costs were not accurately allocated to projects. The Excel spreadsheet used to track projects was also incomplete and had not been updated due to insufficient staffing resources and lack of oversight. Moreover, although Galileo had a project estimation and tracking module to monitor the status of projects, including estimation of labor, materials and actual cost through work orders, the module was not used as staff had not been adequately trained on its use. As a result, the Engineering Section was unable to compare estimates with actual costs and to identify in a timely manner cost overruns for control purposes.

(1) UNMIL should train staff on the use of the Galileo project module to enable better project tracking and costing.

UNMIL accepted recommendation 1 and stated that 14 staff from the Engineering Section would, after Umoja goes live in November 2013, participate in a training course on the use of the Galileo project module in January 2014. Recommendation 1 remains open pending receipt of evidence that UNMIL has trained staff on the use of the Galileo project module.

Engineering job requests were not adequately controlled and timely closed

16. Considering the number of engineering projects and tasks, UNMIL developed an eJR application tool to streamline and enhance monitoring and accountability of engineering activities. However, controls over the eJR process were generally weak. Duplicate job request numbers were assigned to different projects at different dates and there was no mechanism to monitor the status of eJRs. This was due to technical problems related to the development of the system and the absence of supervision and control over eJRs. For example, eJRs were not timely closed and materials were issued against 21 completed and five rejected eJRs respectively.

(2) UNMIL should improve the engineering job request process by ensuring that: (i) duplicate request numbers are not issued; and (ii) engineering job requestors sign off on completed tasks to enable timely closure of job requests.

UNMIL accepted recommendation 2 and stated that the source of duplication was identified and corrected. UNMIL would regularly issue reminders to ensure that eJRs are closed once works are completed. Based on the action taken by UNMIL, recommendation 2 has been closed.

There was a need to improve the monitoring of material issue forms

17. Due to the lack of an asset manager in the Engineering Section to oversee the request and issue of materials, there were lapses in the monitoring of materials issued by the Materials Management Unit to requesting engineering units. While the Supply Section submitted weekly stock reports, the Engineering

Section did not verify and account for materials received. In addition, the Engineering Section issued materials to project sites without adequate tracking and oversight, and records of material request forms issued were not maintained. As a result of the lack of adequate controls, there was an unmitigated risk of engineering materials being misused. For example, two material request forms were forged in an attempt to collect building materials valued at $942. The Mission was taking action on these cases. Also, UNMIL recruited an asset manager in July 2013 and plans were under way to establish an integrated warehouse system.

(3) UNMIL should improve the tracking and verification of the material request process and issuance of materials to engineering projects and tasks.

UNMIL accepted recommendation 3 and stated that an electronic tracking of information and documents would be implemented by December 2013. Recommendation 3 remains open pending receipt of evidence that an adequate system is implemented to track and verify material requests and their issuance.

Cost and time estimates of engineering projects and tasks were not prepared prior to their approval to implement

18. The SOPs required the Engineering Section to endorse the cost and time estimates of projects prior to approval of the eJR and the start of the work; and the Head of the Engineering Section to approve all works with an estimated cost of at least $4,000 or with an expected duration of more than five working days.

19. Due to a lack of capacity and oversight, these approval procedures were not systematically done. For example, a review of 359 eJRs and corresponding material requests indicated that the implementing unit of the Engineering Section did not prepare cost and time estimates for any of the requests prior to approval, and the Head of the Engineering Section did not approve works and material request forms for all of the 727 materials issue vouchers in excess of $4,000 during the period covered by the audit. To address this control weakness, the Engineering Section had up-dated its standard operating procedures, but was still not complying with them. The absence of timely approvals of projects resulted in an unmitigated risk that projects were either not planned as part of the annual work plan or non-priority projects were being implemented.

(4) UNMIL should comply with its standard operating procedures and ensure that engineering works and associated costs are properly approved prior to the start of projects and tasks.

UNMIL accepted recommendation 4 and stated that the Engineering Section and the Communication and Information Technology Section were working to replace the eJR application system by the I-Need application to be implemented by March 2014. Temporary measures would be implemented by December 2013 after Umoja goes live. Recommendation 4 remains open pending receipt of evidence that adequate procedures are in place to approve projects and related costs prior to the start of the project.

There were delays in the delivery of materials

20. The delivery of materials by vendors for 14 of 18 purchase orders reviewed was delayed by one to over five months due to the lack of enforcement of contract terms. As a result, the timely completion of engineering tasks was negatively impacted. For example, the repair of roof leakages at a contingent camp in Monrovia was delayed by over two months due to delays in the delivery of corrugated iron sheets.

Also, fence repairs to enable compliance with minimum operational security standards were delayed by four months due to the late delivery of chain link fence and concertina wire. As the Engineering Section did not have the authority to deal directly with vendors, the Procurement Section needed to implement procedures to ensure that materials were being delivered as agreed.

(5) UNMIL should implement a follow-up mechanism with vendors to ensure the timely delivery of materials.

UNMIL accepted recommendation 5 and stated that bi-weekly meetings between the Engineering and Procurement Sections were addressing delays, and a mechanism for monitoring vendors' performance would be discussed during these meetings. Recommendation 5 remains open pending receipt of evidence that an effective mechanism is in place to follow-up with vendors.

There was a need to improve the monitoring of engineering projects

21. The SOPs required the Engineering Section to continuously supervise projects and tasks and to maintain accurate records of workforce and material consumption. Engineers were assigned to projects/tasks as project managers and were required to prepare daily site reports and an activities log book.

22. Due to the lack of staffing capacity, log books were not available for five of the 19 major in-house projects reviewed. As a result, evidence of supervision to assure the quality and assess project implementation was not available. Also, the project management tool used by the Engineering Section for monitoring project activities was not regularly updated with a detailed breakdown of activities to show the duration and stage of completion. This was due to the lack of a direct link between individual projects and the project master plan, and that engineering staff had not been adequately trained on the project management tool. As a result, completion of some projects was delayed. For example, the upgrade of a Formed Police Unit camp and the relocation of offices and the gym were delayed by more than a year.

(6) UNMIL should regularly monitor major engineering projects and document progress of implementation in log books and ensure that the project master plan and individual project records are regularly updated. Adequate training on the UNMIL project monitoring tool should also be provided to ensure that responsible staff are able to use it effectively.

UNMIL accepted recommendation 6 and stated that log books were implemented for large projects starting September 2013. UNMIL would provide the required training to staff in December 2013. Recommendation 6 remains open pending receipt of evidence that the project master plan has been updated and staff have been trained on the use of the project management tool.

B. Regulatory framework

Standard operating procedures were available

23. SOPs on engineering activities had been established, reviewed and up-dated. Procedures addressed work flow processes and provided adequate guidance to staff on engineering activities.

Inadequate procedures for monitoring the work of individual contractors

24. The Administrative Instruction on consultants and individual contractors (ST/AI/1999/7) required that the selection process for individual contractors should be on a competitive basis, including verification of credentials, qualifications and experience, and completion of medical clearance and reference checks. However, UNMIL did not maintain individual personnel files to document the recruitment process for the 339 individual contractors it had as of 31 March 2013. As a result, OIOS could not assess compliance with the recruitment process stipulated in ST/AI/1999/7. Also, contrary to ST/AI/1999/7, the terms of service of 11 individual contractors were extended beyond six months without prior performance reviews. These lapses were due to the lack of oversight by Management.

25. There was also no mechanism for tracking individual contractors' daily work assignments by project or activity. Daily attendance sheets were not maintained for all individual contractors and when available, they were not signed by the individual contractor nor certified by an immediate supervisor. Individual contractors did not systematically indicate check-in and check-out times due to inadequate supervision by supervisors.

(7) UNMIL should comply with Administrative Instruction on consultants and individual contractors (ST/AI/1999/7) on the recruitment of individual contractors and ensure that accurate attendance records are maintained.

UNMIL accepted recommendation 7 and stated that individual contractors' attendance records were being maintained. It also kept relevant information such as their qualifications and experience as well as reference and medical checks. Recommendation 7 remains open pending receipt of evidence that UNMIL has maintained individual personnel files to document the recruitment process in compliance with Administrative Instruction (ST/AI/1999/7).

IV. ACKNOWLEDGEMENT

26. OIOS wishes to express its appreciation to the Management and staff of UNMIL for the assistance and cooperation extended to the auditors during this assignment.

(*Signed*) David Kanja
Assistant Secretary-General for Internal Oversight Services

ANNEX I

STATUS OF AUDIT RECOMMENDATIONS

Audit of engineering activities in the United Nations Mission in Liberia

Recom. no.	Recommendation	Critical[1]/ Important[2]	C/ O[3]	Actions needed to close recommendation	Implementation date[4]
1	UNMIL should train staff on the use of the Galileo project module to enable better project tracking and costing.	Important	O	Receipt of evidence that UNMIL has trained staff on the use of the Galileo project module.	January 2014
2	UNMIL should improve the engineering job request process by ensuring that: (i) duplicate request numbers are not issued; and (ii) engineering job requestors sign off on completed tasks to enable timely closure of job requests.	Important	C	Action taken	Implemented
3	UNMIL should improve the tracking and verification of the material request process and issuance of materials to engineering projects and tasks.	Important	O	Receipt of evidence that an adequate system is implemented to track and verify material requests and their issuance.	December 2013
4	UNMIL should comply with its standard operating procedures and ensure that engineering works and associated costs are properly approved prior to the start of projects and tasks.	Important	O	Receipt of evidence that adequate procedures are in place to approve projects and related costs prior to the start of the project.	March 2014
5	UNMIL should implement a follow-up mechanism with vendors to ensure the timely delivery of materials.	Important	O	Receipt of evidence that an effective mechanism is in place to follow-up with vendors.	November 2013

[1] Critical recommendations address significant and/or pervasive deficiencies or weaknesses in governance, risk management or internal control processes, such that reasonable assurance cannot be provided regarding the achievement of control and/or business objectives under review.
[2] Important recommendations address important deficiencies or weaknesses in governance, risk management or internal control processes, such that reasonable assurance may be at risk regarding the achievement of control and/or business objectives under review.
[3] C = closed, O = open
[4] Date provided by UNMIL

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STATUS OF AUDIT RECOMMENDATIONS

Audit of engineering activities in the United Nations Mission in Liberia

Recom. no.	Recommendation	Critical[5]/ Important[6]	C/ O[7]	Actions needed to close recommendation	Implementation date[8]
6	UNMIL should regularly monitor major engineering projects and document progress of implementation in log books and ensure that the project master plan and individual project records are regularly updated. Adequate training on the UNMIL project monitoring tool should also be provided to ensure that responsible staff are able to use it effectively.	Important	O	Receipt of evidence that the project master plan has been updated and staff have been trained on the use of the project management tool.	December 2013
7	UNMIL should comply with Administrative Instruction on consultants and individual contractors (ST/AI/1999/7) on the recruitment of individual contractors and ensure that accurate attendance records are maintained.	Important	O	Receipt of evidence that UNMIL has maintained individual personnel files to document the recruitment process in compliance with Administrative Instruction (ST/AI/1999/7)	November 2013

[5] Critical recommendations address significant and/or pervasive deficiencies or weaknesses in governance, risk management or internal control processes, such that reasonable assurance cannot be provided regarding the achievement of control and/or business objectives under review.
[6] Important recommendations address important deficiencies or weaknesses in governance, risk management or internal control processes, such that reasonable assurance may be at risk regarding the achievement of control and/or business objectives under review.
[7] C = closed, O = open
[8] Date provided by UNMIL

APPENDIX I

Management Response

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MANAGEMENT RESPONSE

Audit of engineering activities in the United Nations Mission in Liberia

Rec. no.	Recommendation	Critical[1]/ Important[2]	Accepted? (Yes/No)	Title of responsible individual	Implementation date	Client comments
1	UNMIL should train staff on the use of the Galileo project module to enable project tracking and costing.	Important	YES	Deputy Chief Engineer	January 2014	In progress. Fourteen staff from Engineering Section will be participating in a training course on the use of Galileo project module in January 2014 after UMOJA goes live in November 2013. Engineering Section is in full coordination with the Integrated Mission Training Center/Communication and Information Technology Services.
2	UNMIL should improve the engineering job request process by ensuring that: (i) duplicate request numbers are not issued; and (ii) engineering job requestors sign off on completed tasks to enable timely closure of job requests.	Important	YES	Chief Engineer, Communication and Information Technology Services	(i): implemented since Sept 2013. (ii): implemented since Sept 2013.	Implemented. Source of duplication was identified and neutralized. Evidences have been provided to the office of the resident auditors. Implemented. Messages being broadcasted. Broadcast reminders will be always issued. Evidence has been provided to the office of the resident auditors.
3	UNMIL should improve the tracking and verification of the material request process and issuance of materials to engineering projects and tasks.	Important	YES	Engineering Operations.	Dec 2013	Partially implemented. The full implementation of the electronic tracking of information and documents will be implemented by December 2013.
4	UNMIL should comply with its standard operating procedures and ensure that engineering works and associated costs are properly approved prior to the start of projects and tasks.	Important	YES	Chief Engineer, Communication and Information Technology Services	Dec 2013 and March 2014	In progress. Engineering Section and Communication and Information Technology Services are working together to improve the e-JR application's system. Temporary additional measures will be implemented by Dec 2013, after the UMOJA go live date. In March 2014, Communication and Information Technology Services will launch the I –Need application for Engineering, which will replace the e-JR system.

[1] Critical recommendations address significant and/or pervasive deficiencies or weaknesses in governance, risk management or internal control processes, such that reasonable assurance cannot be provided regarding the achievement of control and/or business objectives under review.

[2] Important recommendations address important deficiencies or weaknesses in governance, risk management or internal control processes, such that reasonable assurance may be at risk regarding the achievement of control and/or business objectives under review.

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MANAGEMENT RESPONSE

Audit of engineering activities in the United Nations Mission in Liberia

Rec. no.	Recommendation	Critical[1]/ Important[2]	Accepted? (Yes/No)	Title of responsible individual	Implementation date	Client comments
5	UNMIL should implement a follow-up mechanism with vendors to ensure the timely delivery of materials.	Important	YES	Chief Engineer and Officer-in-Charge Procurement	Nov 2013	Implemented. Bi-Weekly meetings between Engineering Section and Procurement are addressing all issues of common interest. The mechanism for monitoring vendor's performance will take good part of those meetings.
6	UNMIL should regularly monitor major engineering projects and document progress of implementation in log books and ensure that the project master plan and individual project records are regularly updated. Adequate training on the UNMIL project monitoring tool should also be provided to ensure that responsible staff are able to use it effectively.	Important	YES	Construction and Infrastructure Unit, Planning and Design Unit	Sept 2013 And Dec 2013	Implemented. Log books are implemented already for big projects starting from Sept 2013. Evidences have been provided to the office of the resident auditors. Training on MS project and updating the project master plan will be implemented in Dec 2013.
7	UNMIL should comply with Administrative Instruction on consultants and individual contractors (ST/AI/1999/7) on the recruitment of individual contractors and ensure that accurate attendance records are maintained.	Important	YES	Engineering Section Admin Unit and Engineering Section Budget Unit	15 November 2013.	Ongoing. All relevant Portfolio Of Evidences including accurate attendance records of all Engineering Individual Contractors staff (including check in and check out time), an entire name list of Engineering Individual Contractors staff's credentials, qualifications, experience, references, medical check and mechanisms to track Individual Contractors daily activities work will be provided by 15 Nov 2013.

[1] Critical recommendations address significant and/or pervasive deficiencies or weaknesses in governance, risk management or internal control processes, such that reasonable assurance cannot be provided regarding the achievement of control and/or business objectives under review.

[2] Important recommendations address important deficiencies or weaknesses in governance, risk management or internal control processes, such that reasonable assurance may be at risk regarding the achievement of control and/or business objectives under review.