

ABSTRAK

PENENTUAN KRITERIA DAN PEMBOBOTAN EVALUASI TEKNIS KONTRAKTOR JASA ENGINEERING DENGAN METODE ANALYTICAL HIERARCHY PROCESS STUDI PADA PT PHE ONWJ

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Dalam mendukung kegiatan operasional *engineering*, *engineering department* PT PHE ONWJ dibantu oleh pihak ketiga yaitu kontraktor jasa *engineering*. Kontrak jasa *engineering* ini berdurasi 3 tahun. Setelah kontrak selesai, pekerjaan jasa *engineering* ini akan dilelang secara terbuka. Penentuan kriteria evaluasi teknis jasa *engineering* berdasarkan kontrak terdahulu, sedangkan pembobotannya, berubah-ubah tergantung penilaian subyektifitas team pembuat kontrak pada periode tersebut. Kriteria dan pembobotan evaluasi teknis ini belum ada standar baku sehingga akan beresiko dalam pengambilan keputusan strategis perusahaan.

Penelitian ini bertujuan untuk mendapatkan kriteria, subkriteria dan pembobotan yang obyektif yang dapat menggambarkan *requirement* dari *end user* dalam mencari kontraktor yang berkualitas. Metode pengumpulan data dalam penelitian ini adalah wawancara dan pengisian kuesioner oleh nara sumber dan responden yang dianggap *expert* dalam evaluasi kontrak jasa *engineering*. Responden dipilih dengan metode *judgement sampling* dan telah memenuhi kriteria yang telah ditetapkan. Setelah mendapatkan data yang memenuhi *consistency ratio*, data diolah dengan menggunakan metode *analytical hierarchy process* (AHP). Dengan penelitian ini diharapkan kriteria dan pembobotan yang dihasilkan dapat dipertanggungjawabkan secara akademik dan dapat menjadi rujukan dalam pembuatan standar baku evaluasi teknis jasa *engineering*.

Penelitian ini menghasilkan kriteria dan subkriteria yang pembobotannya dihitung dengan *software* AHP-OS. kriteria *past experience* (20.6%) mempunyai subkriteria: *blanket engineering* (38.4%), FEED (33.3%), *special design* (28.3%). Kriteria *work management plan* (7.6%) mempunyai subkriteria: PEP (26%), *project orchart* (20.7%), *office facilities* (29.2%), *contingency plan* (24.1%). Kriteria *personnel qualification* (20.9%) mempunyai subkriteria: *project management* (36.2%), *engineering* (63.8%). Kriteria *work methodology* (7.8%) mempunyai subkriteria: *forecast manning* (26.5%), *list of potential contract* (19.9%), *workflow for blanket* (26.8%), *statement of guarantee* (26.7%). Kriteria *technical capability* (24.2%) mempunyai subkriteria: *technical presentation* (28.2%), *engineering software* (71.8%). Kriteria QA/QC (6.8%) mempunyai subkriteria: *quality policy* (27%), *quality plan* (29%), *quality manual* (28.1%), *audit plan* (15.9%). Kriteria HSE (12.2%) mempunyai subkriteria: *HSE policy* (22.7%), *HSE performance* (48%), *HSE plan* (29.3%).

Kata kunci: AHP, kriteria, subkriteria, pembobotan, *expert*.

ABSTRACT

DETERMINATION OF CRITERIA AND WEIGHTING OF TECHNICAL EVALUATION OF ENGINEERING SERVICE CONTRACTOR BY ANALYTICAL HIERARCHY PROCESS METHOD STUDY IN PT PHE ONWJ

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In supporting the engineering operations, PT PHE ONWJ's engineering department is assisted by a third party; an engineering service contractor with a three-year contract for blanket engineering services. After the contract period is completed, the blanket engineering service will be publicly tendered. The evaluation criteria for blanket engineering service are commonly based on previous contracts. The weighting will be subject to the assessment of the contracting team. The criteria and the weighting of the technical evaluation do not have any standard yet. It will be a risk factor in the company's strategic decision making.

This study aims to obtain the criteria, sub-criteria and the weighting that can represent the requirements of end users in finding the best contractor. Data collection is obtained by interviewing and filling out questionnaires by both informants and respondents who are considered experts in the evaluation of blanket engineering services. These respondents were selected by the judgment sampling method, and have met the established criteria. After the data is obtained and meets the consistency ratio, the data is processed using the analytical hierarchy process (AHP) method. With this research, it is expected that the resulting criteria and weighting can be accounted for academically, and can be a reference in making the standard technical evaluation of blanket engineering services.

This study produces the criteria and sub-criteria for which weighting is calculated by AHP-OS software. The past experience criteria, accounting for 20.6%, has the following sub-criteria: blanket engineering (38.4%), FEED (33.3%), and special design (28.3%). The work management plan's (7.6%) sub-criteria are as follow: PEP (26%), project organization chart (20.7%), office facilities (29.2%), and contingency plan (24.1%). The qualification personnel's (20.9%) sub-criteria: project management (36.2%), and engineering (63.8%). The work methodology's (7.8%) sub-criteria: forecast manning (26.5%), list of potential contract (19.9%), workflow for blanket (26.8%), and statement of guarantee (26.7%). The technical capability's (24.2%) sub-criteria: technical presentation (28.2%), and engineering software (71.8%). The QA / QC's (6.8%) sub-criteria: quality policy (27%), quality plan (29%), quality manual (28.1%), and audit plan (15.9%). Lastly, HSE's (12.2%) sub-criteria: HSE policy (22.7%), HSE performance (48%), HSE plan (29.3%).

Keywords: AHP, criteria, sub-criteria, weighting, expert