**PROJECT MANAGEMENT**

**Learning Outcome 1: ACTIVITY 6**

**GROUP/PAIRS ACTIVITY**

**The work breakdown structure (WBS) for a nuclear project**

The work breakdown structure (WBS) of a new nuclear project is planned as shown in Appendix B.

The man-hour estimates for each WBS element are provided in Appendix A.

**QUESTIONS**

(a) Based on the information provided calculate the overall man-hour estimate for the entire project.

(b) The average rate for each man-hour on each WBS element is estimated as follows:

1 Conceptual Design $75

2 Design $65

3 Construction $40

4 Project Administration $32

5 Systems Development $72

6 Startup $65

Given this information, calculate an approximate total budget for the project. Include 10% contingency.

(c) A specialist contractor (ABB Cost Consultants) has quoted a fixed price of £16,650 to carry out the Independent Construction Cost Estimate required by the project. This is a reputable and experienced company. Advise the project whether or not to accept this proposal.

**Appendix A**

WBS man-hour estimates

|  |  |  |
| --- | --- | --- |
| **WBS code** | **Title** | **Man-hours** |
| 1 | Conceptual Design | 7000 |
| 1.1 | Conceptual Design | 5000 |
| 1.2 | Criteria Development | 2000 |
| 2 | Design | 41500 |
| 2.1 | Definitive Design | 22000 |
| 2.2 | CADD Consultant | 4500 |
| 2.3 | Engineering Support | 15000 |
| 3 | Construction | 289500 |
| 3.1 | Construction Preparation | 12000 |
| 3.2 | Building | 264000 |
| 3.3 | Process & Service Systems | 9500 |
| 3.4 | Construction Inspection | 4000 |
| 4 | Project Administration | 27200 |
| 4.1 | Project Control | 7600 |
| 4.2 | Records Management | 2500 |
| 4.3 | Support Services | 9500 |
| 4.4 | Engineering | 6600 |
| 4.5 | Independent Construction Cost Estimate | 1000 |
| 5 | Systems Development | 8900 |
| 5.1 | Process Development | 3400 |
| 5.2 | Design Support | 1800 |
| 5.3 | Plant Liaison | 2200 |
| 5.4 | Computer/Control System Development | 1500 |
| 6 | Startup | 5800 |
| 6.1 | Test Preparation | 800 |
| 6.2 | Test Performance | 3200 |
| 6.3 | Manuals | 1200 |
| 6.4 | Integrated Testing | 600 |

**Appendix B**