# 1. INTRODUCTION 1

2. OBJECTIVES 2

## 3. EQUIPMENT IDENTIFICATION 3

4. STAFF TRAINING 3

## 5. LABORATORY SPACE PREPARATION 4

#### 6. EQUIPMENT PROCUREMENT 4

- 6.1. The Instrumented Impact Machine 4
- 6.2. The Hydropuls Standard Material Testing Machine 6
- 6.3. The Travelling Microscope 8
- 6.4. The Controlled Atmosphere Furnace 8

## 7. EXPERT VISITS AND PERSONNEL TRAINING 8

- 8. INSTALLATION, COMMISSIONING AND CALIBRATION 9
- 8.1. The Impact Machine 9
- 8.2. Load Cell Calibration of Impact Machine 11
- 8.2.1. The Energy Method 11
- 8.2.2. The Low-Blow Elastic Impact Method 12
- 8.3. The Hydropuls PSB25 Machine 13

#### 9. RESEARCH AND DEVELOPMENT ACTIVITIES 14

- 9.1. Work on Stainless Steels 14
- 9.1.1. Introduction 14
- 9.1.2. Experiments 15
- 9.1.3. Results 15
- 9.1.4. Conclusions 22
- 9.2. The Bilateral Programme 22
- 9.2.1. Impact Tests on Some KFA Specimens 22
- 9.2.2. Thyssen Steel 25
- 9.2.3. HSST Steel 30

#### 10. INDUSTRY SERVICE ACTIVITIES 32

# 11. PROPOSALS FOR FUTURE R&D PROGRAMMES 35

## 12. JOINT AEA-KFA PUBLICATIONS ON PVS 36

**REFERENCES 37**