EMISSION CONTROLS 4-2 POSITIVE CRANKCASE VENTILATION SYSTEM 4-2 **OPERATION 4-2** TESTING 4-2 REMOVAL & INSTALLATION 4-2 **EVAPORATIVE EMISSION** CONTROLS 4-2 OPERATION 4-2 REMOVAL & INSTALLATION 4-3 EXHAUST GAS RECIRCULATION SYSTEM OPERATION 4-3 COMPONENT TESTING 4-4 REMOVAL & INSTALLATION 4-4 **ELECTRONIC ENGINE CONTROLS 4-6** POWERTRAIN CONTROL MODULE (PCM) 4-6 OPERATION 4-6 OXYGEN SENSOR 4-6 OPERATION 4-6 TESTING 4-7 REMOVAL & INSTALLATION 4-7 IDLE AIR CONTROL VALVE 4-8 **OPERATION 4-8** TESTING 4-8 **REMOVAL & INSTALLATION 4-8** ENGINE COOLANT TEMPERATURE (ECT) SENSOR 4-8 **OPERATION 4-8** TESTING 4-8 **REMOVAL & INSTALLATION 4-9** INTAKE AIR TEMPERATURE SENSOR 4-10 **OPERATION 4-10** TESTING 4-10 REMOVAL & INSTALLATION 4-10 MASS AIRFLOW SENSOR 4-10 OPERATION 4-10 TESTING 4-11 REMOVAL & INSTALLATION 4-11 MANIFOLD AIR PRESSURE (MAP) SENSOR 4-11 **OPERATION 4-11** TESTING 4-11 REMOVAL & INSTALLATION 4-12 THROTTLE POSITION SENSOR 4-12 OPERATION 4-12 TESTING 4-12 REMOVAL & INSTALLATION 4-12 CAMSHAFT POSITION SENSOR 4-12 TESTING 4-12 REMOVAL & INSTALLATION 4-12 CRANKSHAFT POSITION SENSOR 4-13 OPERATION 4-13 TESTING 4-13 REMOVAL & INSTALLATION 4-13 **COMPONENT LOCATIONS 4-14** TROUBLE CODES —EEC-IV

SYSTEM 4-17

GENERAL INFORMATION 4-17 FAILURE MODE EFFECTS MANAGEMENT (FMEM) 4-17 HARDWARE LIMITED OPERATION STRATEGY (HLOS) 4-17 DIAGNOSTIC LINK CONNECTOR 4-17 HAND-HELD SCAN TOOLS 4-17 **ELECTRICAL TOOLS 4-17 READING CODES 4-18** VISUAL INSPECTION 4-18 **ELECTRONIC TESTING 4-18** CLEARING CODES 4-21 **CONTINUOUS MEMORY CODES 4-21 KEEP ALIVE MEMORY 4-21** TROUBLE CODES —EEC-V SYSTEM (OBD-II) 4-21 GENERAL INFORMATION 4-21 MALFUNCTION INDICATOR LAMP 4-22 DATA LINK CONNECTOR 4-22 **ELECTRICAL TOOLS 4-22 READING CODES 4-22** CLEARING CODES 4-22 CONTINUOUS MEMORY **CODES 4-22** KEEP ALIVE MEMORY 4-22 EEC-V DIAGNOSTIC TROUBLE CODES (DTC'S) 4-22 VÁCUUM DIAGRAMS 4-27 COMPONENT LOCATIONS COMMON EMISSIONS AND ELECTRONIC ENGINE CONTROL COMPONENT LOCATIONS-3.8L ENGINE 4-14 COMMON EMISSIONS AND ELECTRONIC ENGINE CONTROL COMPONENT LOCATIONS-4.6L ENGINE 4-15 COMMON EMISSIONS AND ELECTRONIC ENGINE CONTROL COMPONENT LOCATIONS-5.0L ENGINE 4-16

